







# Common Investment Meeting (NYCERS)

<b>Schedule</b>	Monday, December 17, 2018 9:00 AM — 2:00 PM EST
<b>Venue</b>	Office of the New York City Comptroller, 1 Centre Street, 10th Floor (Room 1005) - Northside, New York, NY 10007
<b>Organizer</b>	Kim Boston


## Agenda

---

	PUBLIC AGENDA	1
9:00 AM	Welcome and Opening	
9:10 AM	Total Fund Performance Overview	2
	 CIM Presentation Slides_QUARTERLY PERFORMANCE OVERVIEW_121718.pdf	3
	SUPPLEMENTAL MATERIAL - PERFORMANCE REPORTING (Public):	51
	Total Fund Overview (Public):	52
	 NYCERS 3Q18 Quarterly Report Overview_(Public).pdf	53
	ETI Quarterly Report (Public):	120
	 CIM_ETI 3Q Quarterly Report_12-17-2018 (NYCERS).pdf	121
	Private Equity Quarterly Report (Public):	127
	 CIM_Private Equity 2Q Qrtly Report (Public)_12-17-18 (NYCERS).pdf	128
	Real Estate Quarterly Report (Public):	160
	 CIM_RE 2Q Qtrly Rpt (Public)_12-17-18 (NYCERS).pdf	161
	Infrastructure Quarterly Report (Public):	170
	 CIM_Infrastructure 2Q Quarterly Report_12-17-2018 (NYCERS).pdf	171

---

Risk Quarterly Report (Public): 190


 CIM\_Risk 3Q Quarterly Report\_12-17-2018 (NYCERS).pdf 191

---

APPENDICES: 210


---

Basket Clause: 211

 CIM\_Basket Clause Report\_12-17-2018 (NYCERS).pdf 212

---

Liquidity Analysis: 213

 CIM\_Liquidity Report\_12-17-2018 (NYCERS).pdf 214

---

# PUBLIC AGENDA

# Total Fund Performance Overview

# **PUBLIC MARKET RETURNS**

## **Third Quarter 2018**



# Market Returns: Q3-2018

- Continued Global Divergences



Source: Bloomberg



# Market Returns: Q3-2018

- Global Divergences

	Q3 Equity return	Q3 GDP	10-yr yields, Q3 change	10-yr yields, level
<b>US</b>	7.12%	3.5%	+20bp	3.06
<b>China</b>	-1%	6.5%	+14bp	3.62
<b>Germany</b>	.6%	-.2% (quarterly)	+17bp	.47
<b>UK</b>	-1.38%	.6% (quarterly)	+29bp	1.57
<b>Japan</b>	8.1%	-1.2%	+10bp	.13



# Market Returns: Q3-2018

- Divergent moves in Dollar

Developed Market Currencies (\$ index = .7 %)

	<b>Euro</b>	<b>GBP</b>	<b>Yen</b>	<b>C\$</b>	<b>A\$</b>
\$	.65 %	-1.3 %	3.4 %	-1.5 %	-2.4 %

Emerging Market Currencies (\$ index= 2.75 %)

	<b>CNY</b>	<b>Mex</b>	<b>Turkish Lira</b>	<b>Brl</b>
\$	3.8 %	-5.3 %	24 %	4 %





# Current Global Macro Issues

- Markets Update

## Global Equity Markets

	CY Returns through Q 3	Q 4 Returns through 12/11
Russell 3K	10.57	-9.82 %
MSCI World ex USA (IMI)	-1.62%	-12.11%
EM	-7.68 %	-7.79%

## US Treasury interest rates

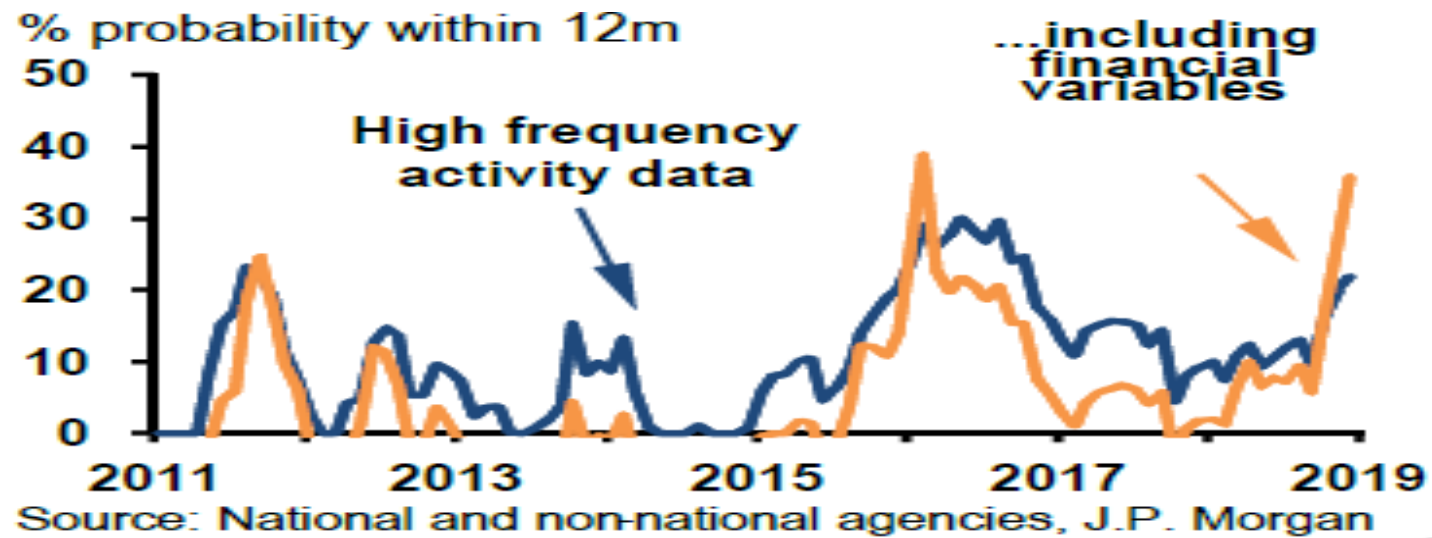
Maturity	CY change in Yield, through Q 3	Q 4 change in Yield, through 12/11
2-Year	+90 bp	-5 bp
10-Year	+60 bp	-18 bp
30-Year	+40 bp	-9 bp



# Current Market Themes

## 1) Global growth slowdown

- US-slowdown, but no recession



- Europe – growth concerns in Italy, UK, Germany, and France
- Asia – China concerns lessened, Japan remains in slow growth

# Current Market Themes

## 2) Global Interest Rates

- **US**

FOMC meeting 12/19, 25bp rate increase expected. Uncertainty over amount of rate hikes expected in '19 and '20?

Quantitative tightening of \$150/quarter expected to continue through '19.

- **Europe**

Quantitative easing decreased from 90B € in Q3 to 45B € in Q4, terminating at end of Q4

No rate hikes expected through 9/19.

Bank of England forward rate path uncertain given Brexit uncertainties

- **Japan**

Quantitative easing continues to slow, and decreased buying of long duration JGB's

Bank of Japan – reversal rate concerns



# Current Market Themes

## 3) Additional uncertainties:

- US – China trade/tariff issues
- Brexit negotiations
- Italy-EU fiscal standoff
- Wash DC – Trump legal concerns, legislative gridlock
- Rising equity and interest rate volatility
- US corporate leverage concerns, GE debt issues
- US equities – downward risks to earnings forecast, appropriate price-earnings multiple in current environment



# Current Market Themes

## US Equities

- Q3 Earnings and guidance disappointed.
- Earnings concern include: 1) rising labor costs; 2) increasing raw material costs and 3) tariff concerns
- What is appropriate earnings multiple going forward?

## US equity earnings

Year	Earnings	% Growth
2016	\$118	.5 %
2017	\$132	11.8 %
2018 E	\$162	22.7 % (~10% of growth from cut in corporate tax rate)
2019 E	\$178	9.8 %

## '19 earnings and PE multiples

Multiples	14x	15x	16x	17x
Earnings				
\$169	2366	2535	2704	2873
\$178	2492	2670	2848	3026
\$187	2618	2805	2992	3179



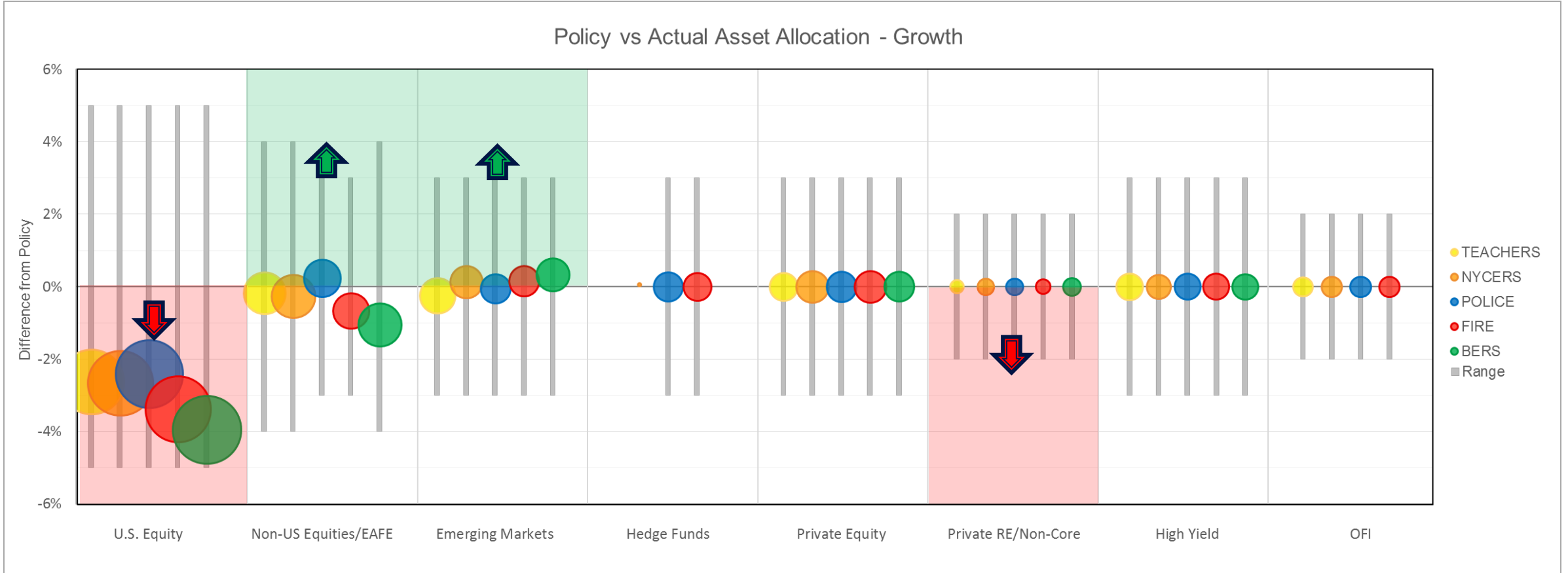
# Current Market Themes

- **Portfolio concerns**
- Lower US equities
- Higher US interest rates
- Wider US credit spreads



# Q3 - Asset Allocation Review - Growth

## Relative Mix to Adjusted New Policy Weights

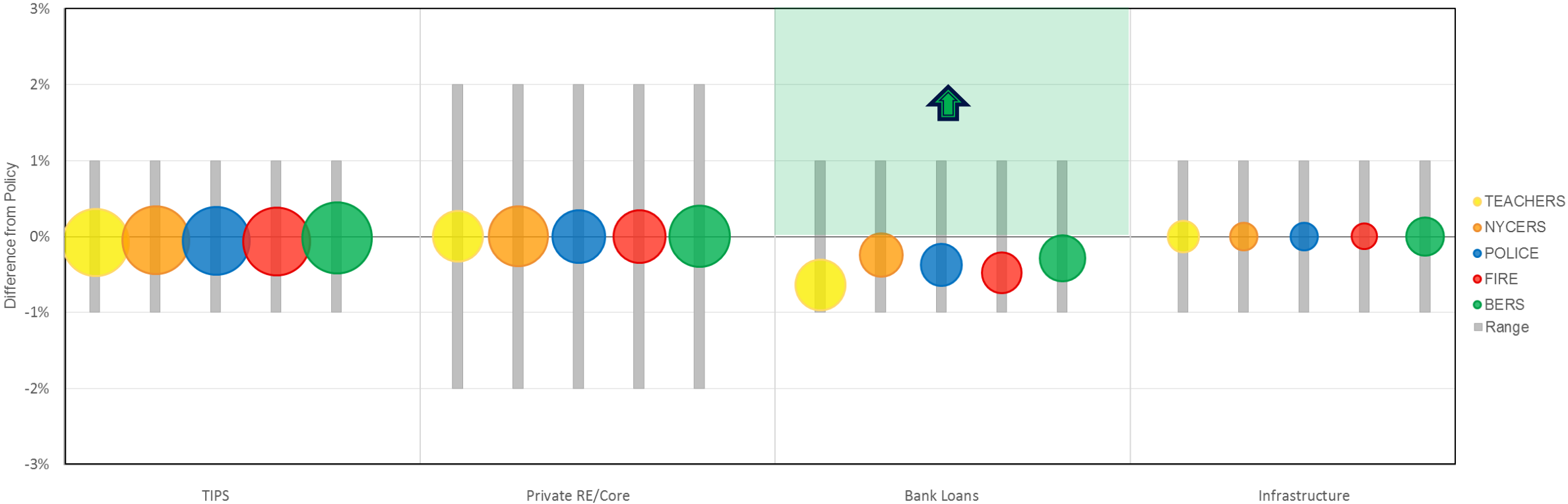


Source: State Street

# Q3 - Asset Allocation Review – Inflation Protection

## Relative Mix to Adjusted New Policy Weights

Policy vs Actual Asset Allocation - Inflation Protection

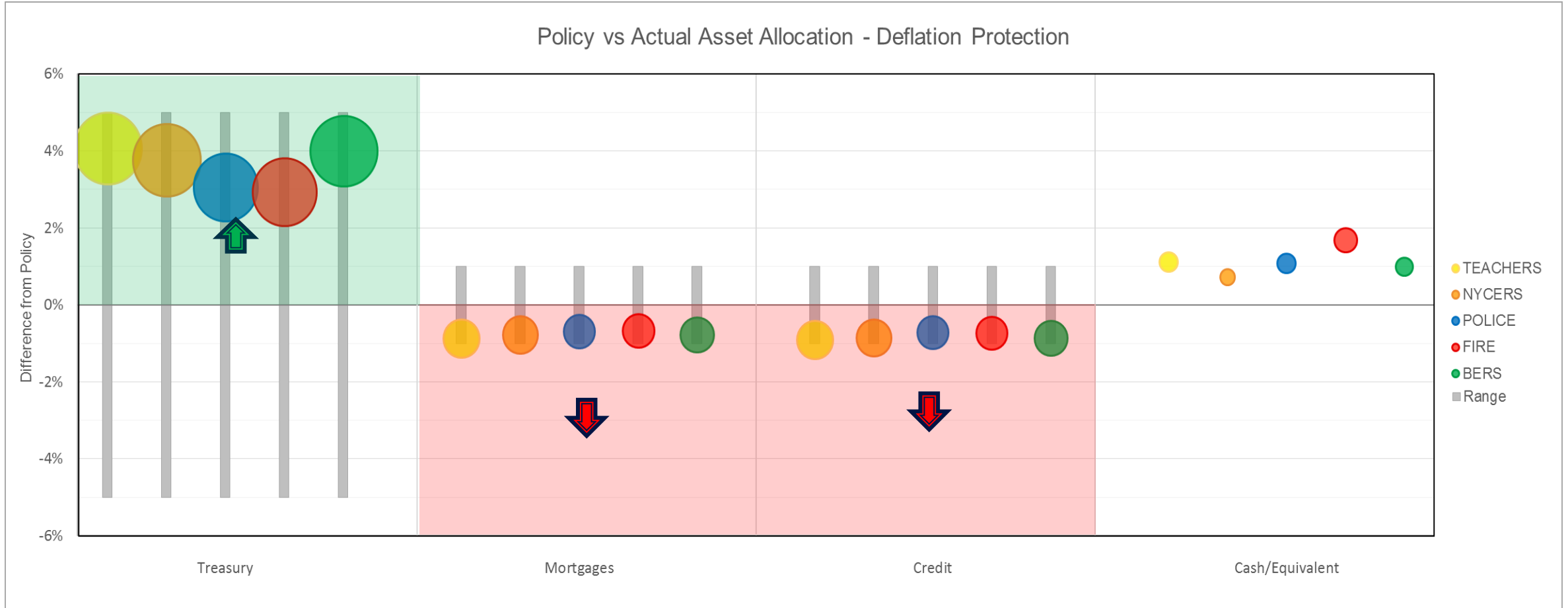


Source: State Street



# Q3 - Asset Allocation Review - Deflation Protection

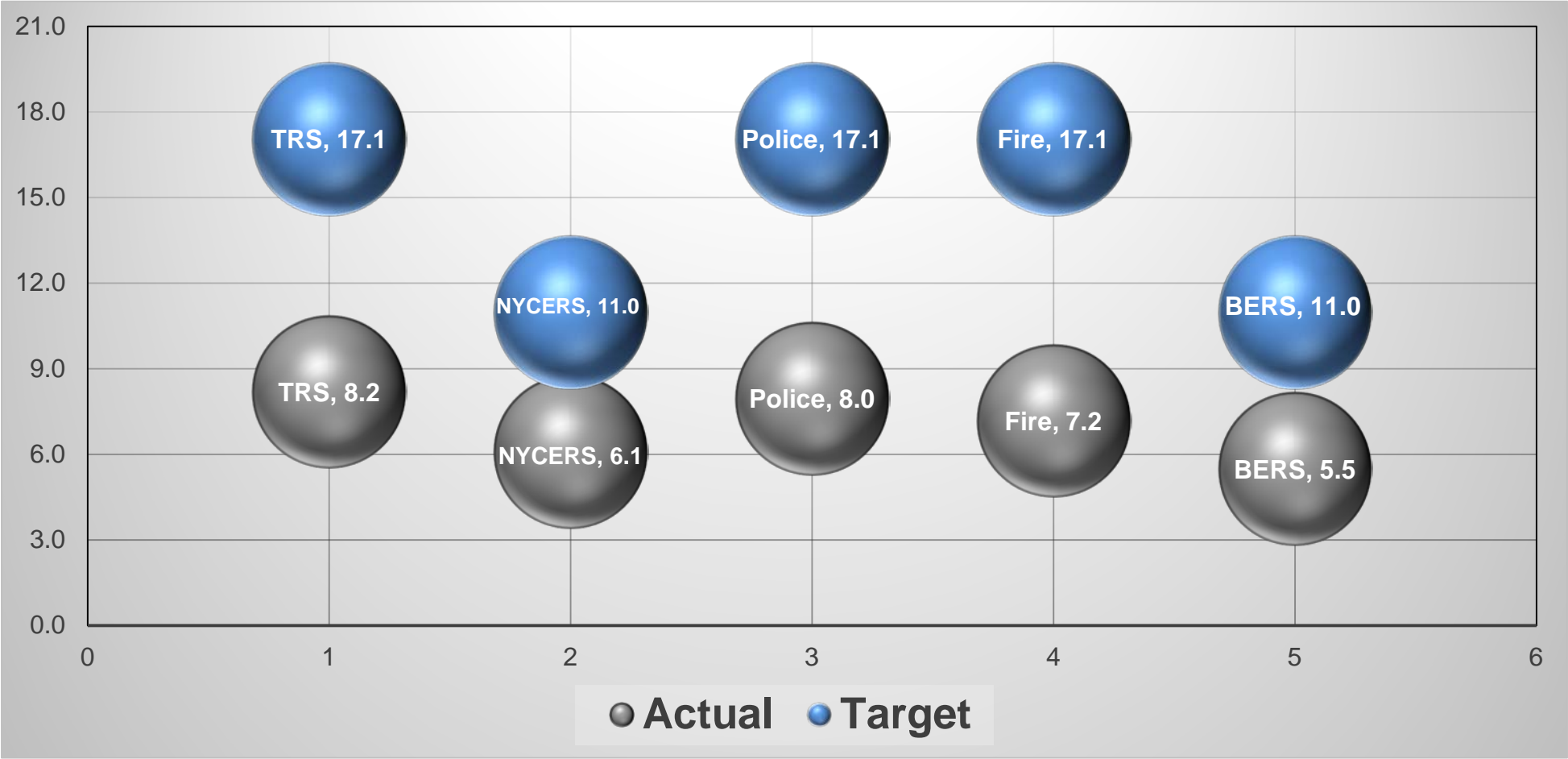
## Relative Mix to Adjusted New Policy Weights



Source: State Street



# Treasury Duration Actual Vs. Target as of 09/30/2018



Source: State Street

# PERFORMANCE REPORTING

## Third Quarter 2018



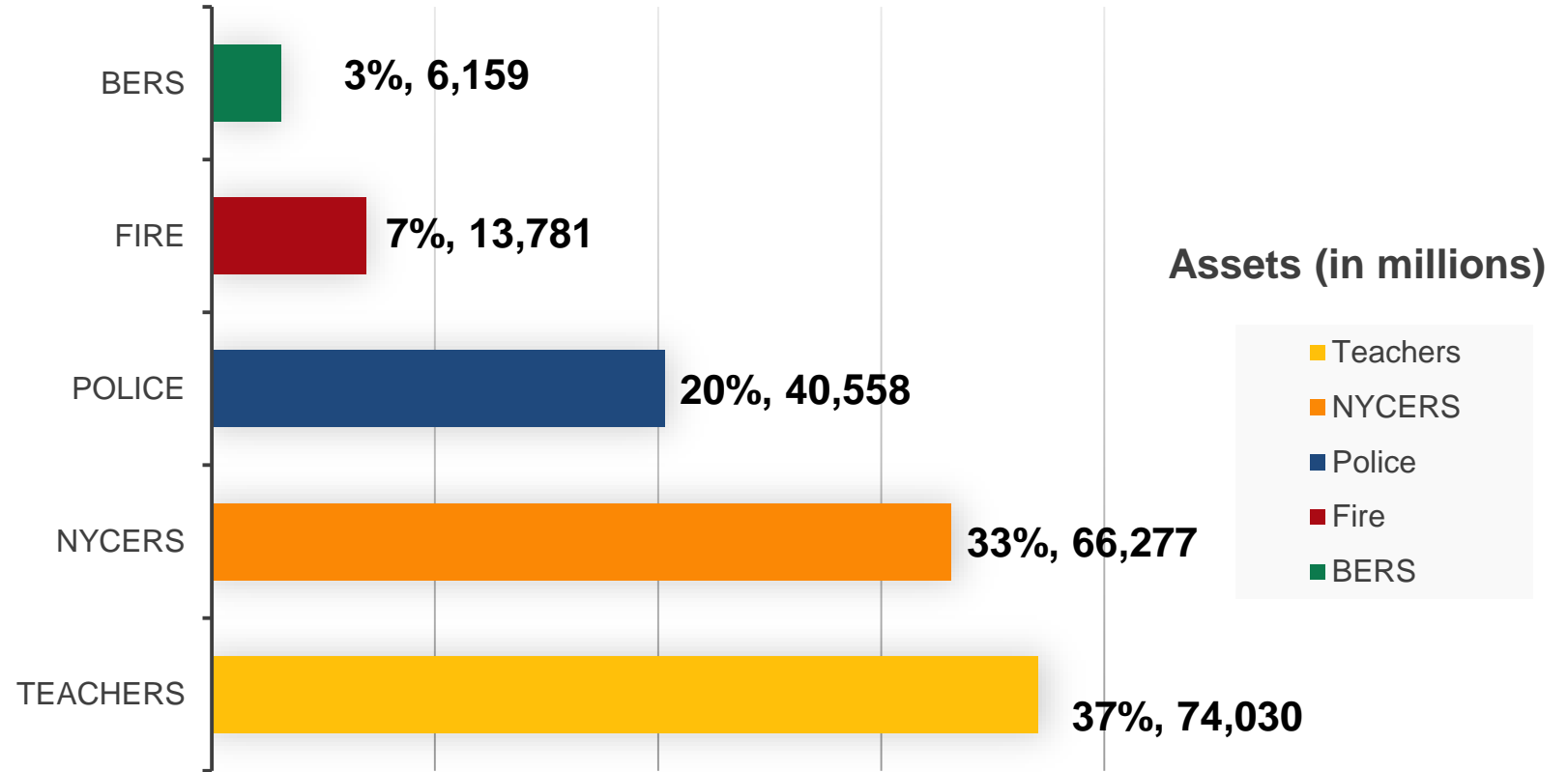
# NYC Retirement Systems AUM (% , in millions)

\$200,805(m) Total AUM for all 5 Systems as of September 30, 2018



Board of Education Retirement System

New York City Fire Pension Fund



Source: State Street



# Total NYC Pension Fund Net Performance as of 09/30/2018

NYC Pension System	Portfolio Std Dev - 1 yr.	3 Month	One Year Trailing	Three Year Trailing
BERS	5.00%	2.56%	8.28%	11.60%
TRS	4.66%	2.70%	7.18%	10.16%
NYCERS	4.55%	2.82%	7.60%	10.29%
POLICE	4.49%	2.75%	8.18%	10.53%
FIRE	4.39%	2.62%	7.94%	10.27%
<b>Public Mkt Equiv 65/35</b>		<b>3.35%</b>	<b>7.54%</b>	<b>9.79%</b>
<b>Median Fund - TUCS</b>		<b>2.67%</b>	<b>8.11%</b>	<b>10.01%</b>

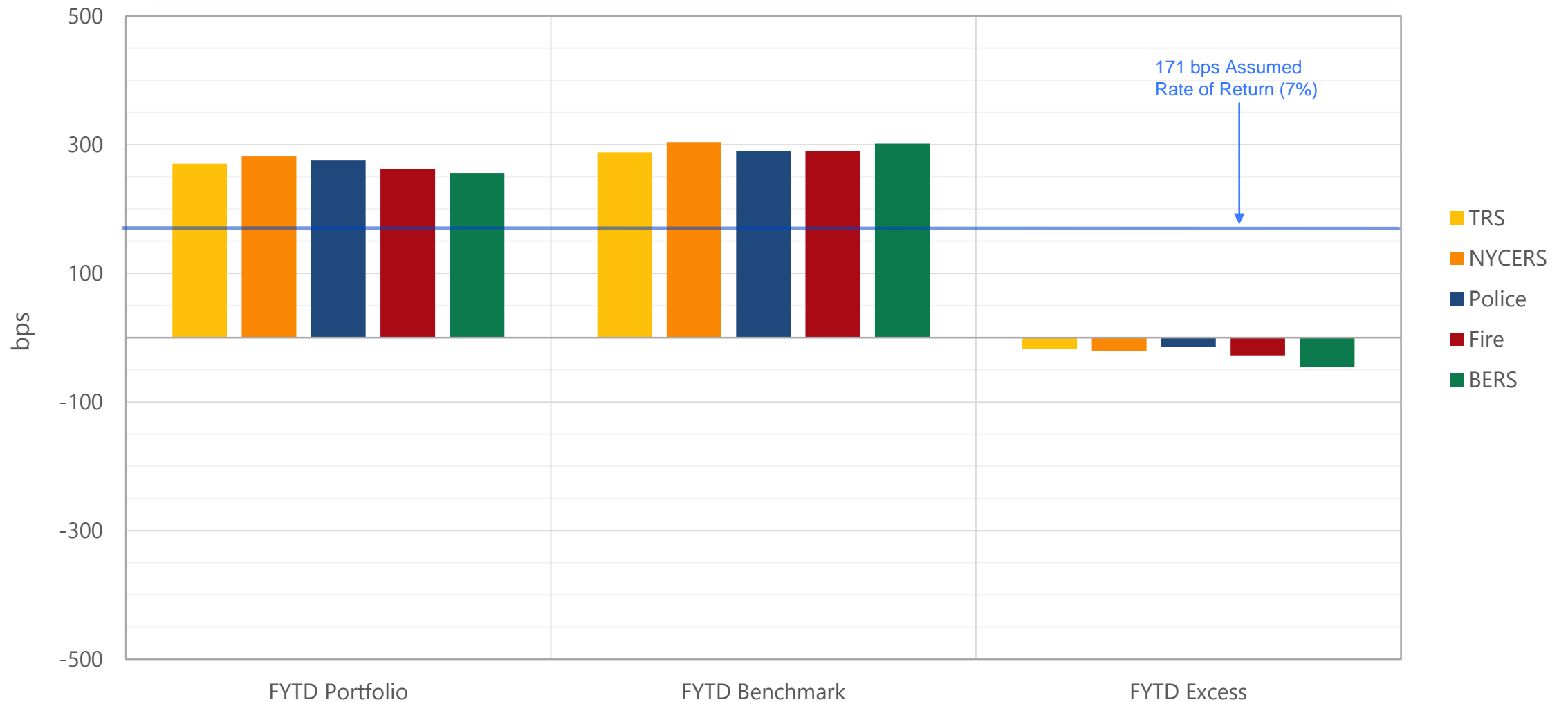
Net of fees in public asset classes are recorded on an accrual basis.  
Private markets data is reported on a lagged basis

Source: State Street



# Fiscal Year to Date Return as of 09/30/2018 – Total Portfolio

Basis Points of Excess Return (SSB T p.29; N, p.30; F p. 31; P, B p.32)

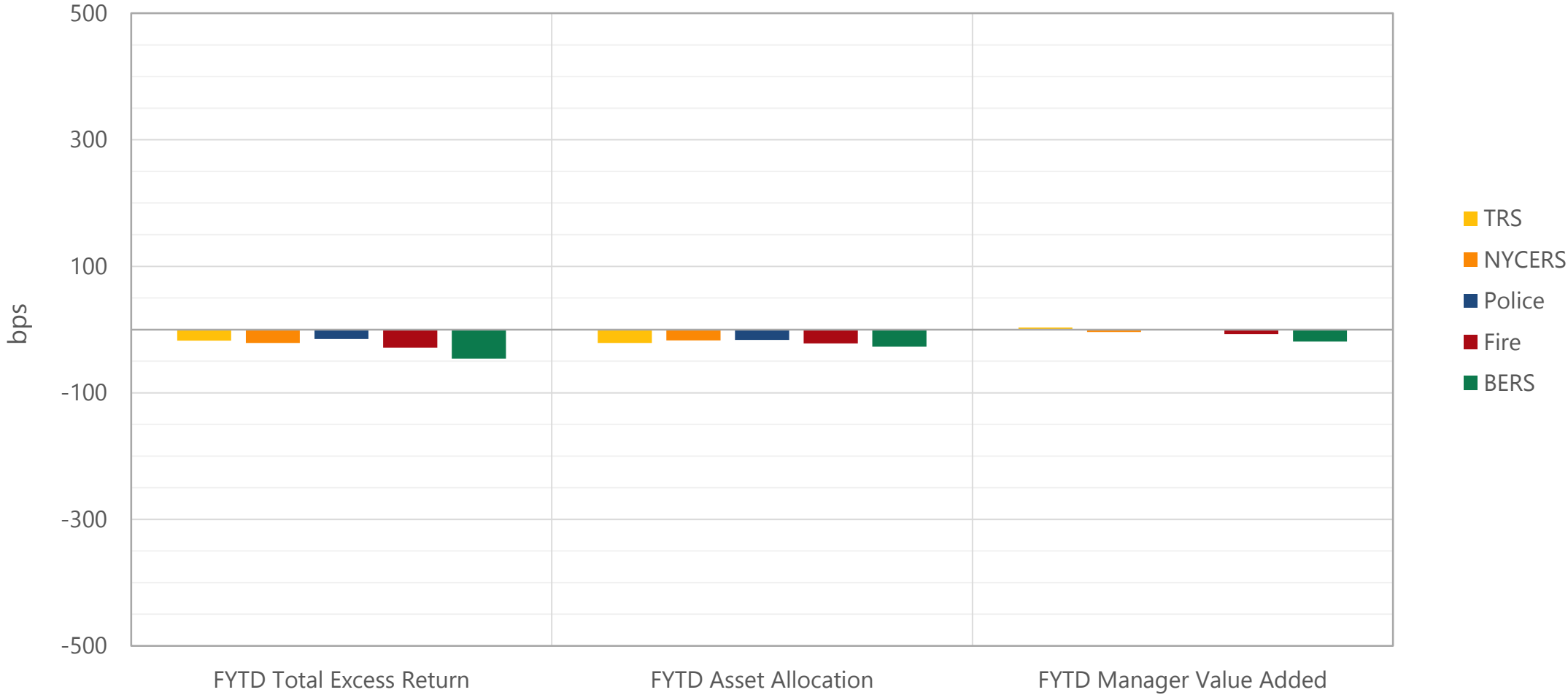


Source: State Street



# Fiscal Year to Date as of 09/30/2018 Excess Return – Total Portfolio

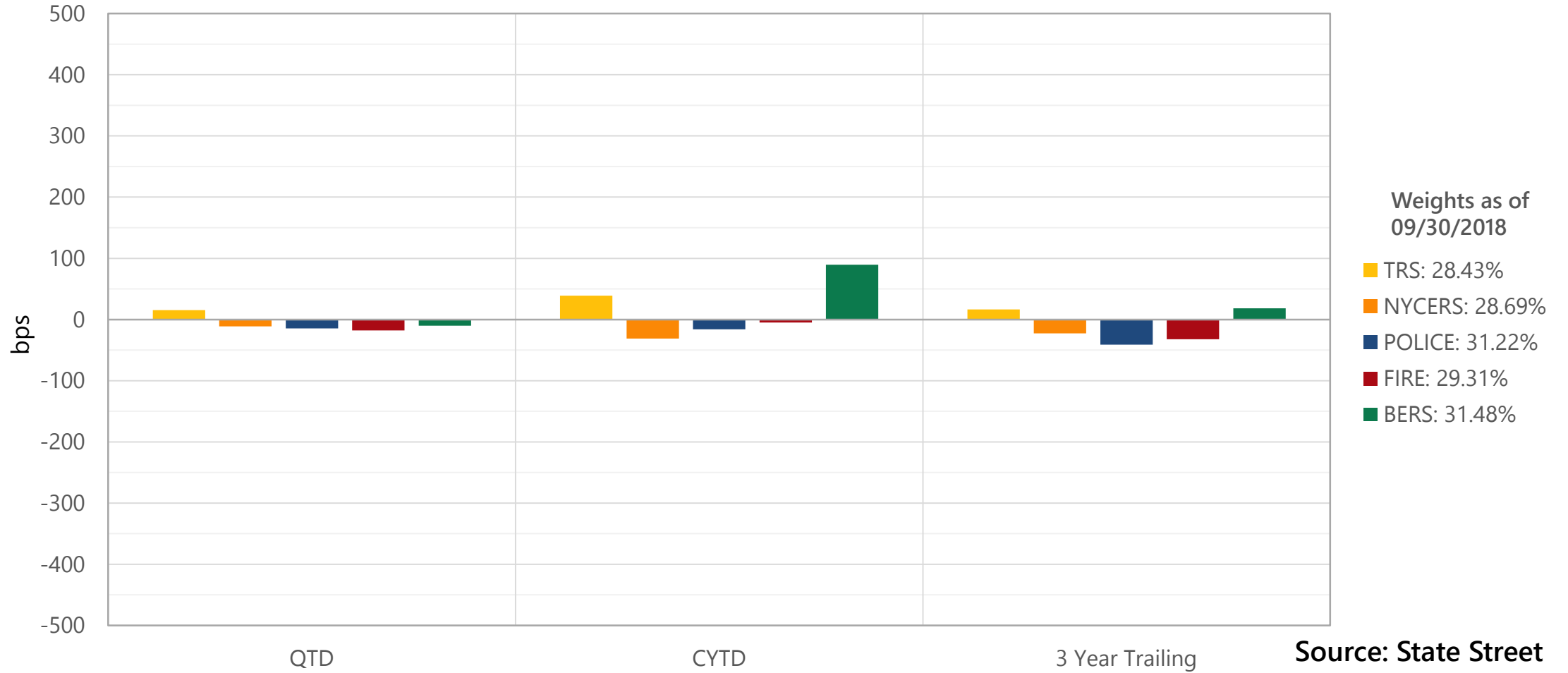
Basis Points of Excess Return (SSB **N**, **T** p. 15; **F** p. 16 ; **P** p.17; **B** p.18)



Source: State Street

# Value Added – Total Domestic Equity

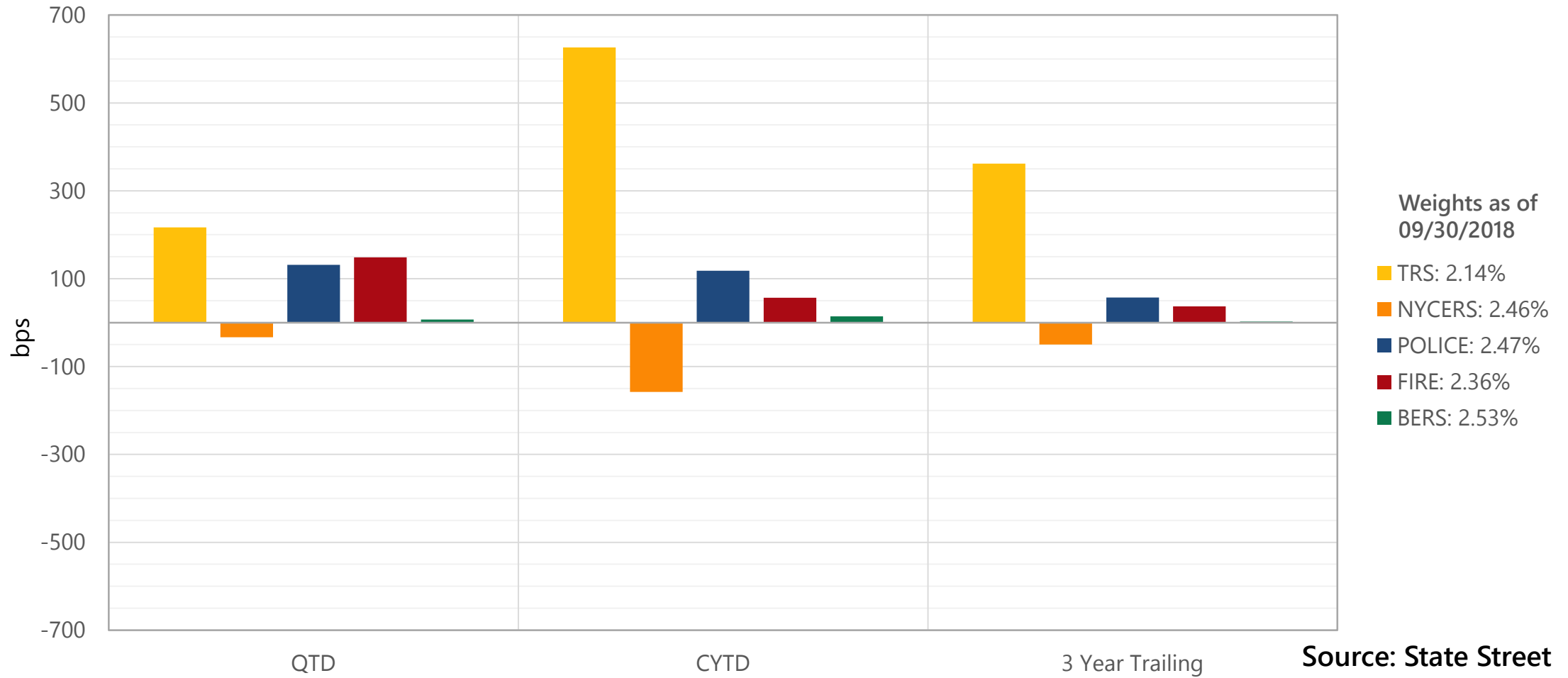
Basis Points of Excess Return (SSB T p.29; N, p.30; F p. 31; P, B p.32)





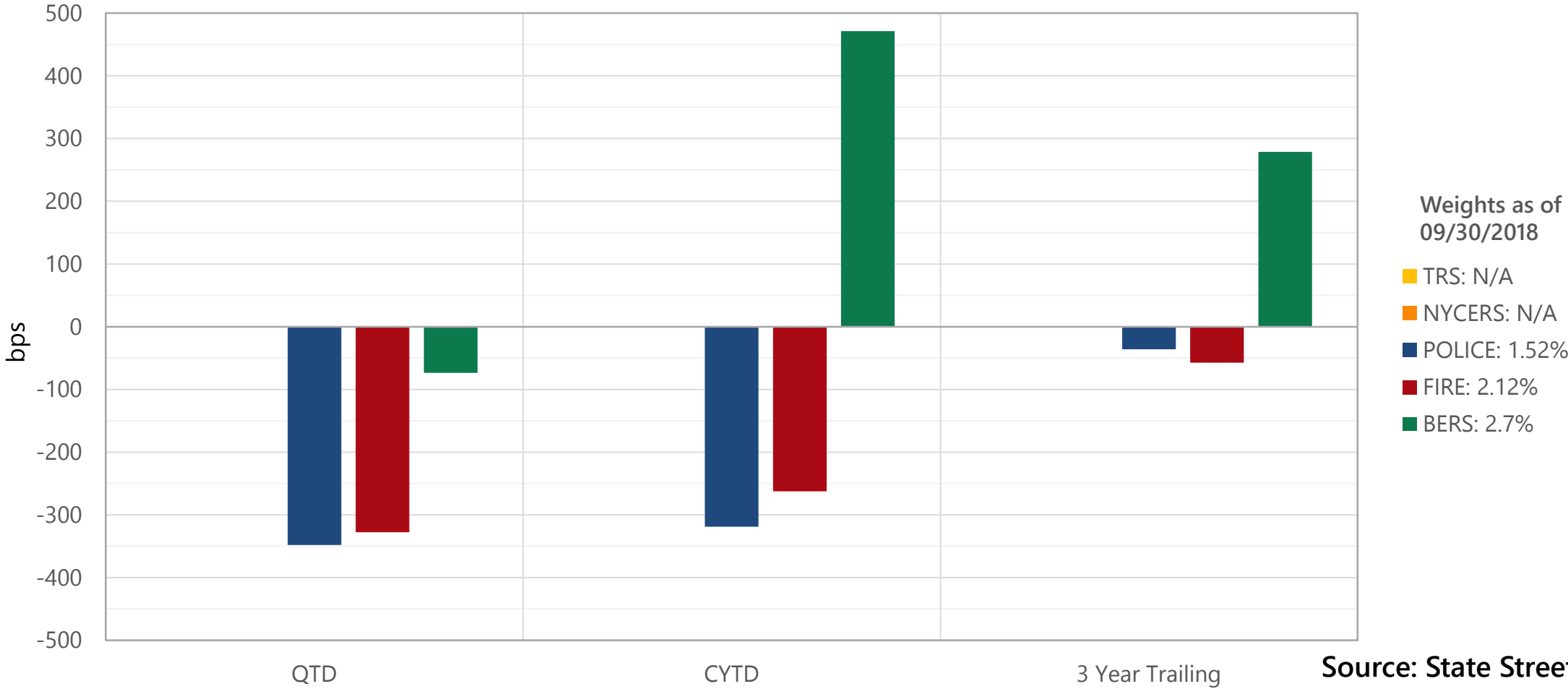
# Value Added – Total Domestic Small Cap

Basis Points of Excess Return (SSB T p.29; N, p.30; F p. 31; P, B p.32)



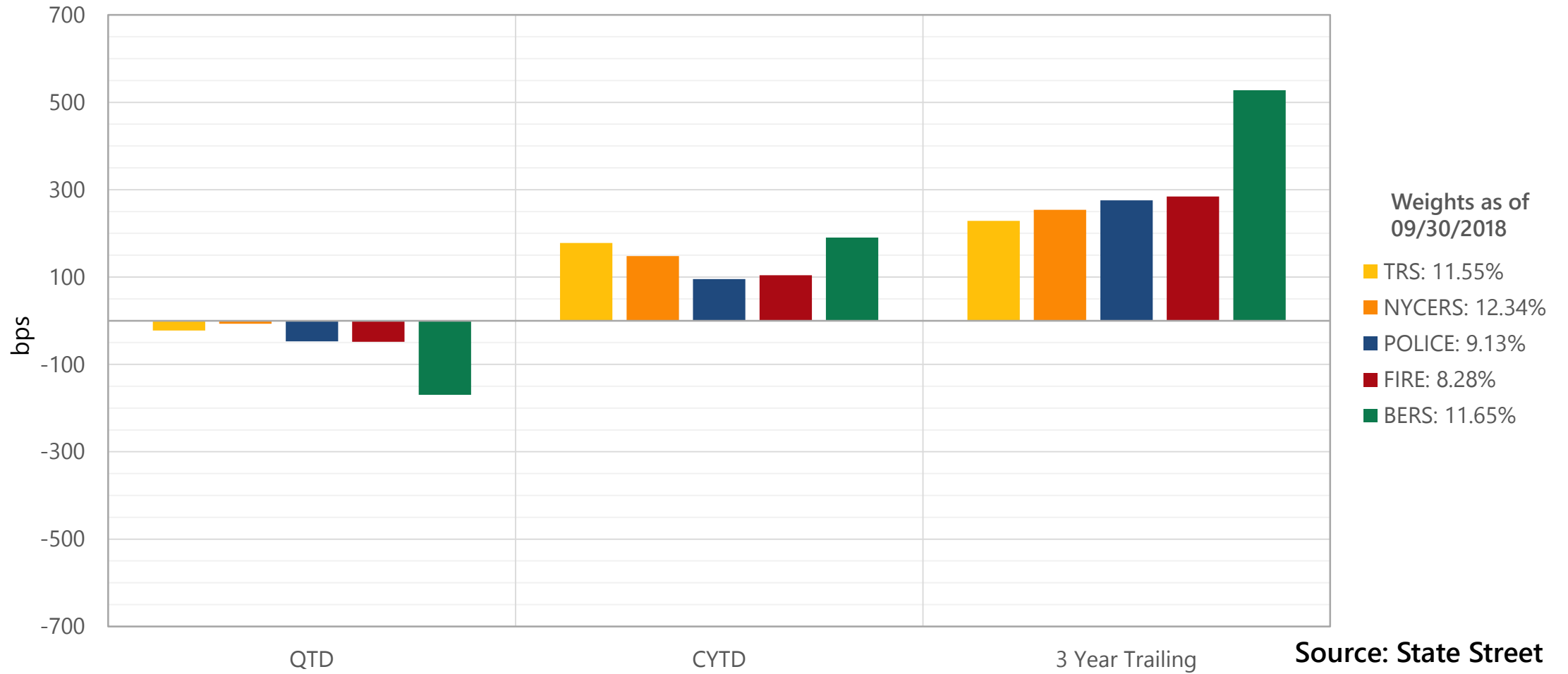
# Value Added – Total Domestic Mid-Cap

Basis Points of Excess Return (SSB F p. 31; P; B p.33)



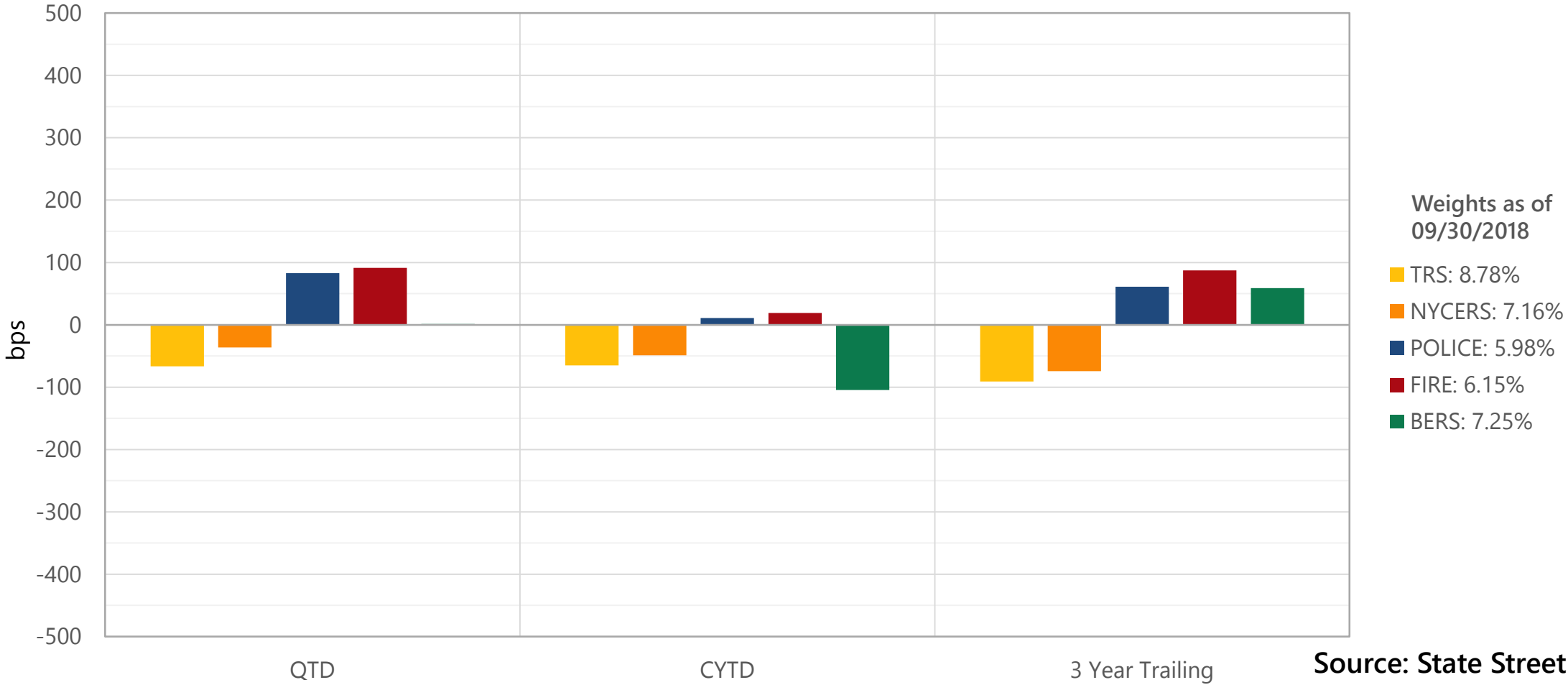
# Value Added – Total World Ex-USA

Basis Points of Excess Return (SSB; T p.30; N p. 32; F, B p.33; P p. 34)



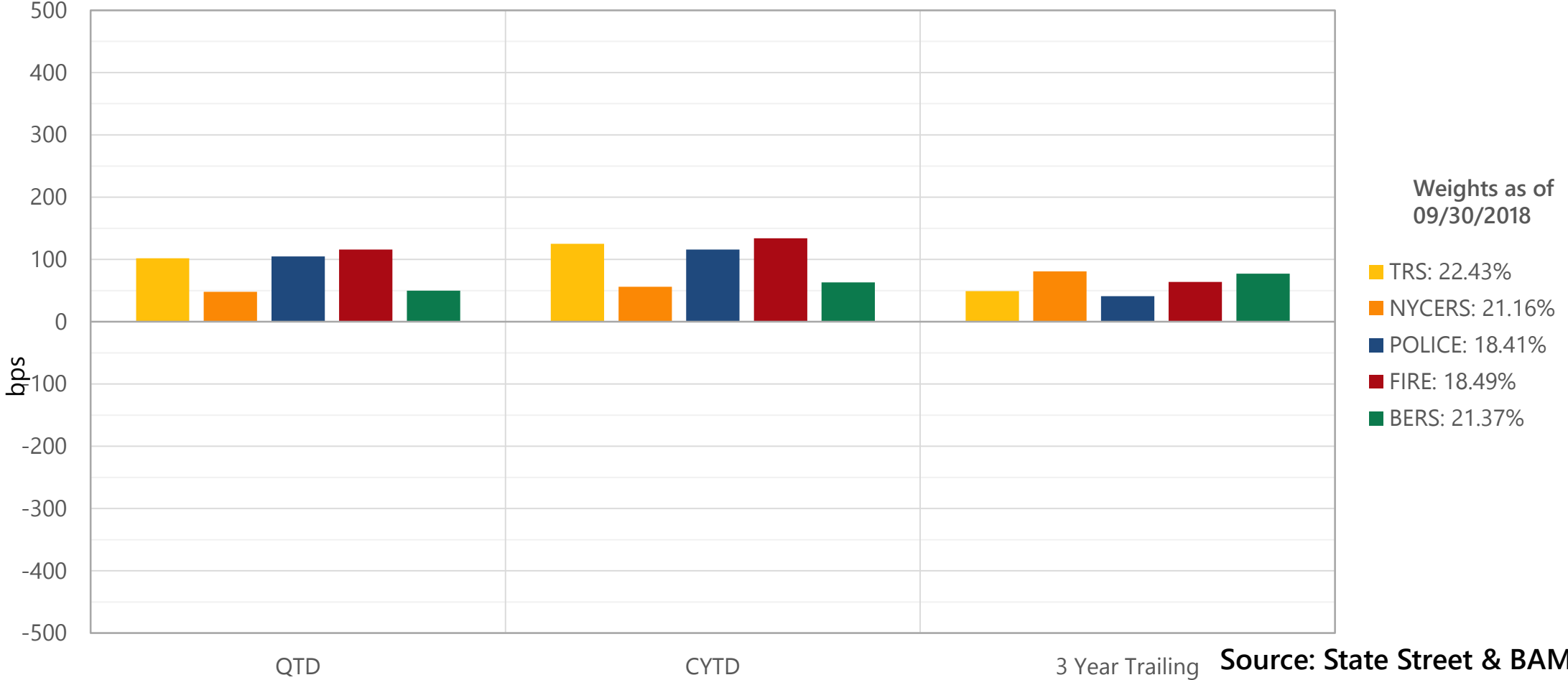
# Value Added – Total Emerging Markets

## Basis Points of Excess Return



Source: State Street

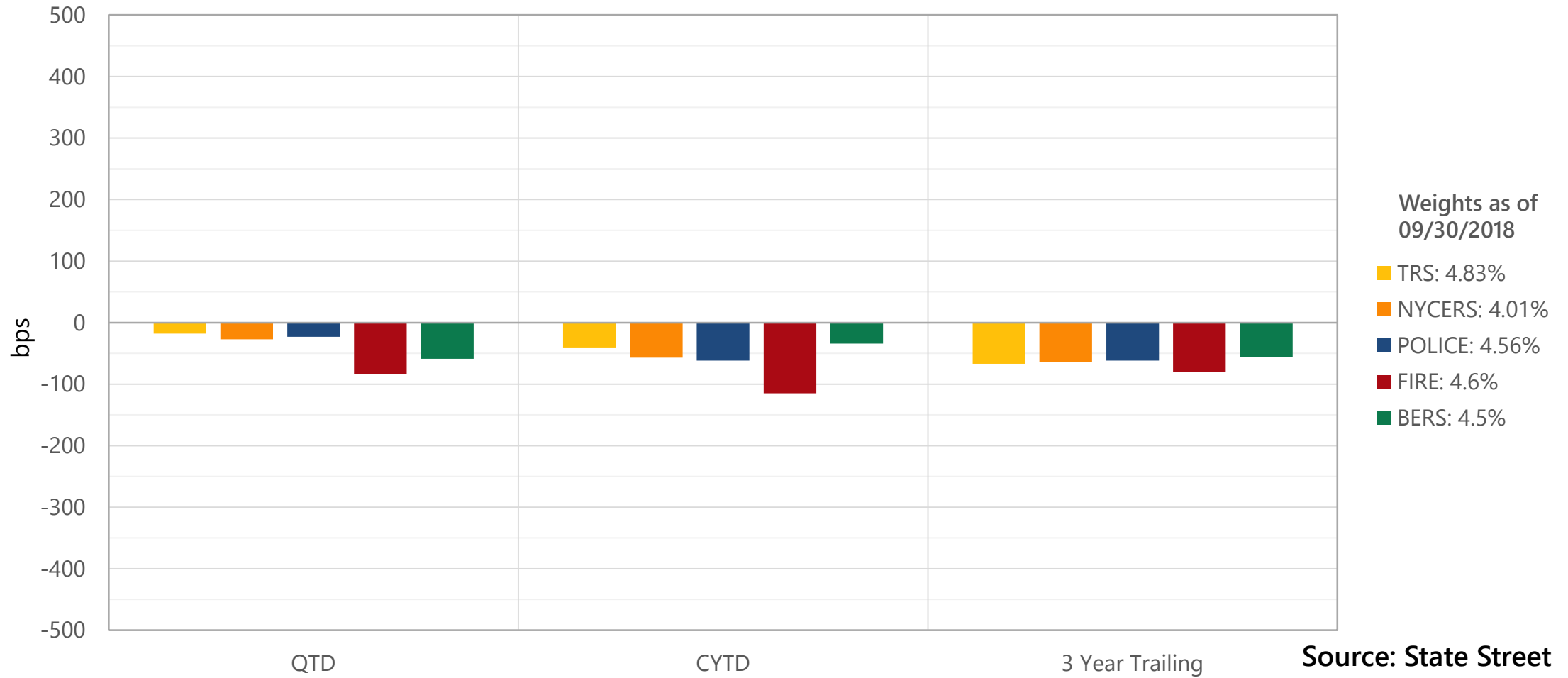
# Value Added – Total Structured Fixed Income



Note: The blended benchmark reflects the current asset allocation.

# Value Added – High Yield

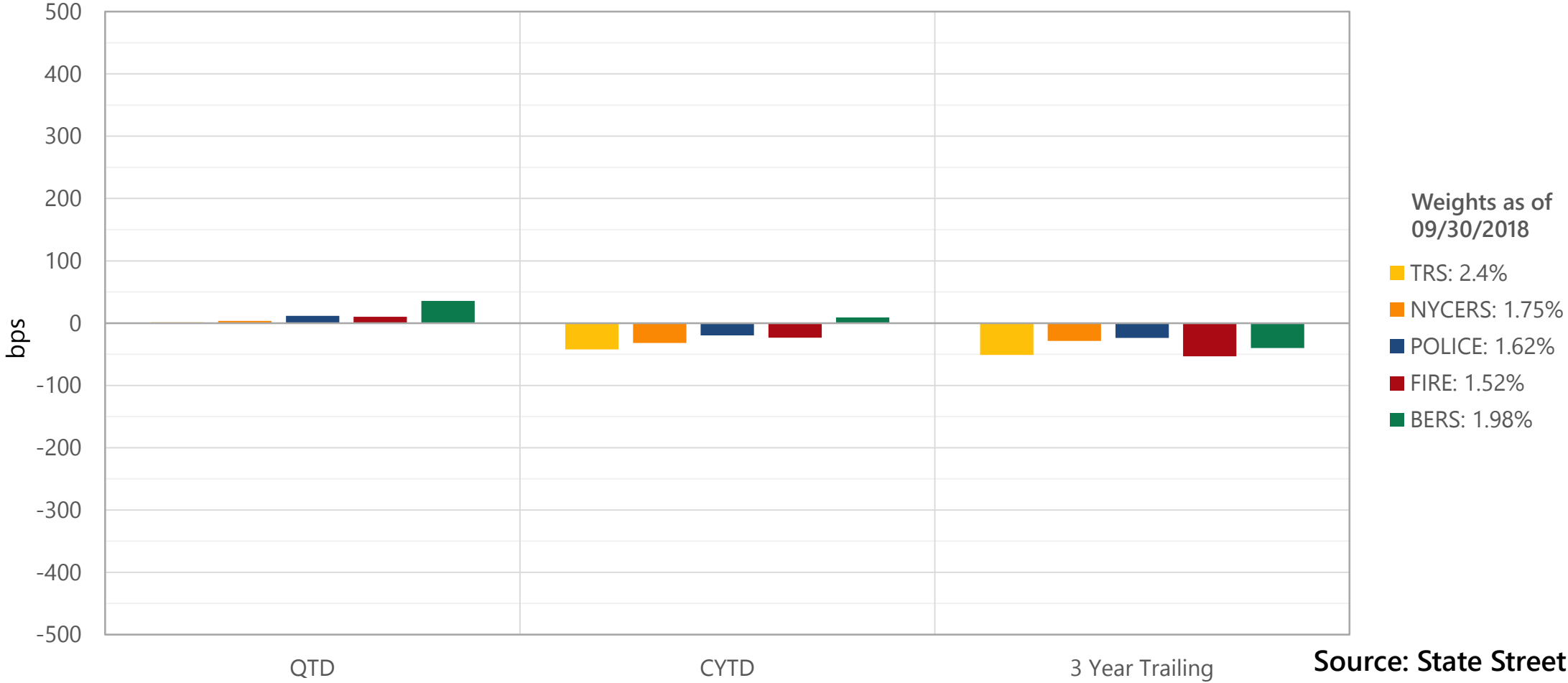
Basis Points of Excess Return (SSB; T p.33; B p.35; N p.36; F, p.37; P p.38)



Source: State Street

# Value Added – Bank Loans

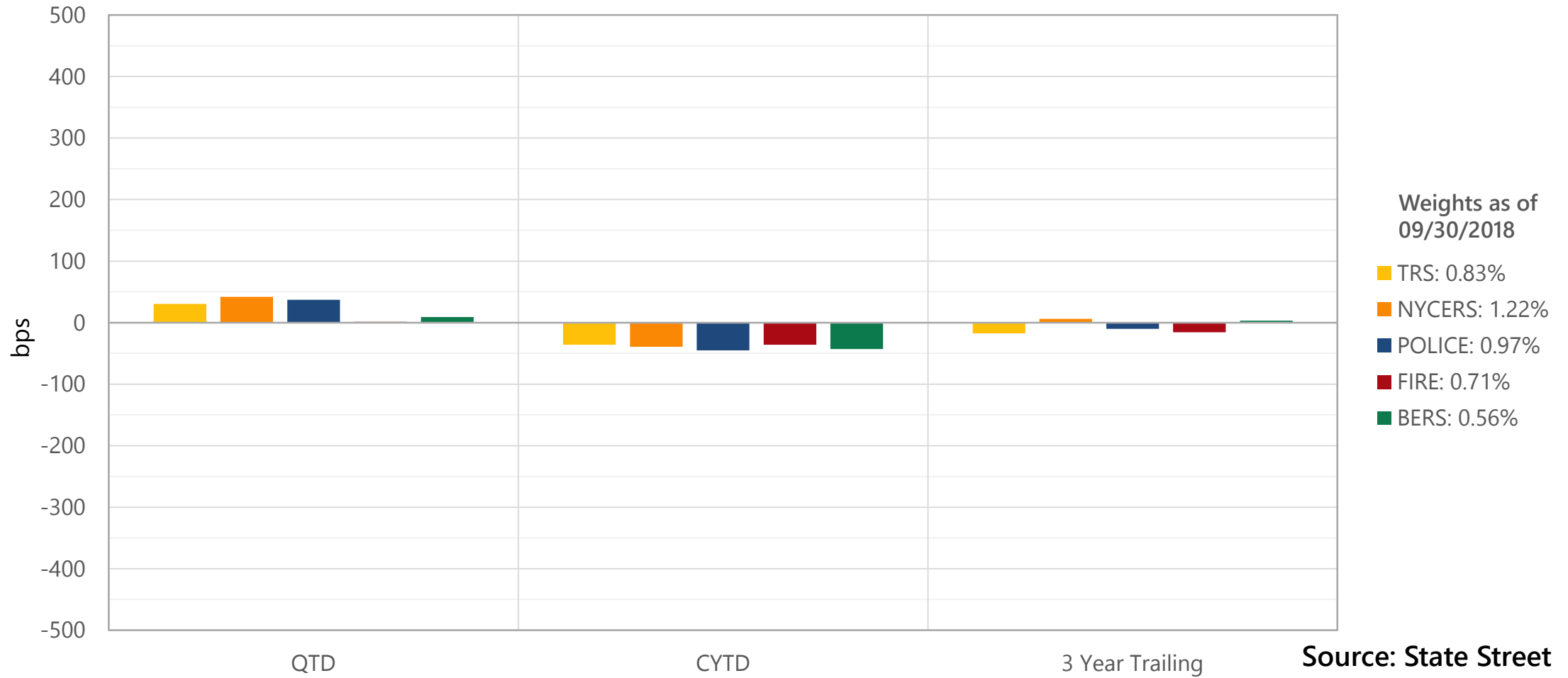
Basis Points of Excess Return (SSB; T p.33; B p.35; N, F p.37; P p.38)



Source: State Street

# Value Added – Economically Targeted Investments

Basis Points of Excess Return (SSB; T p 34; B p 35; N, F p38; P p39)

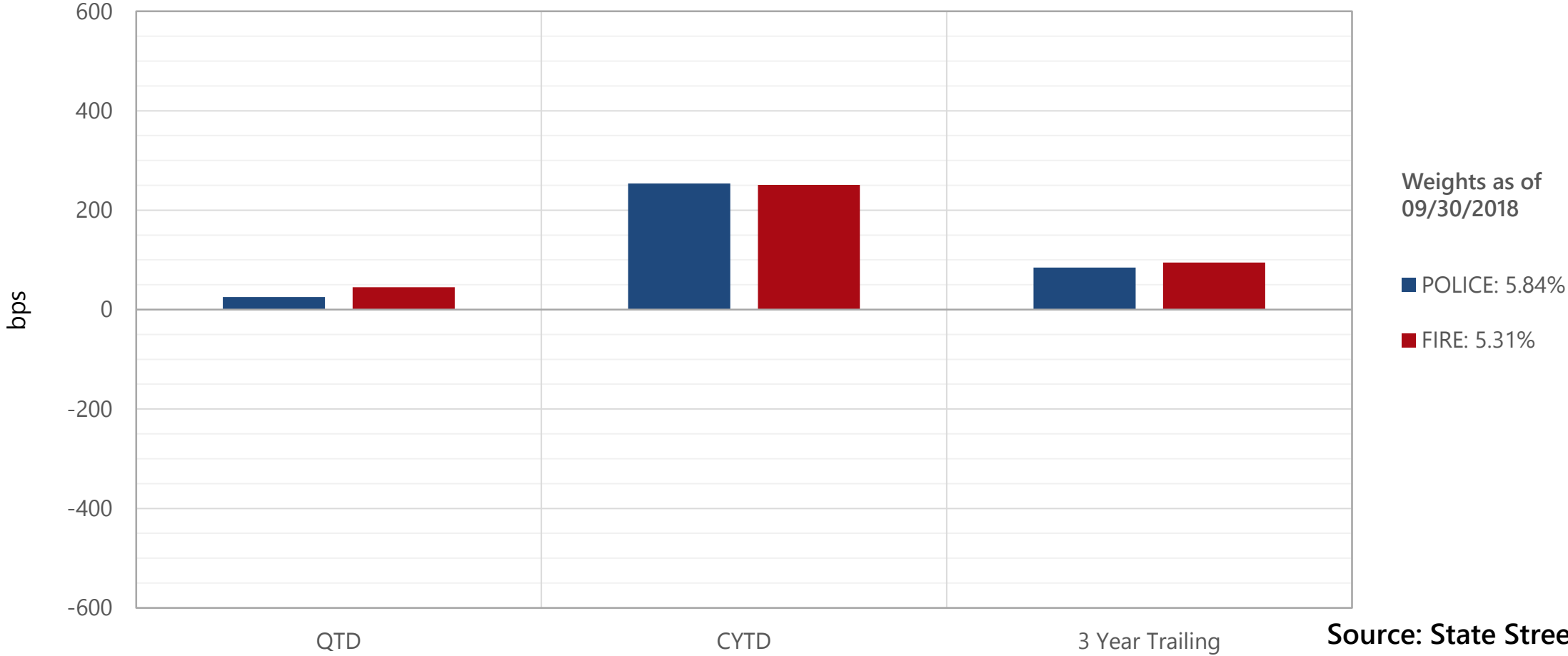


Source: State Street



# Value Added - Hedge Funds

Basis Points of Excess Return (SSB F p.61; P p.64)



# Hedge Fund Returns Less Tactical Trade

	Q3 2018	CYTD	3 year
Fire	1.25%	4.40%	5.30%
Police	0.99%	4.40%	5.20%
HFRI +100	0.46%	1.65%	4.30%

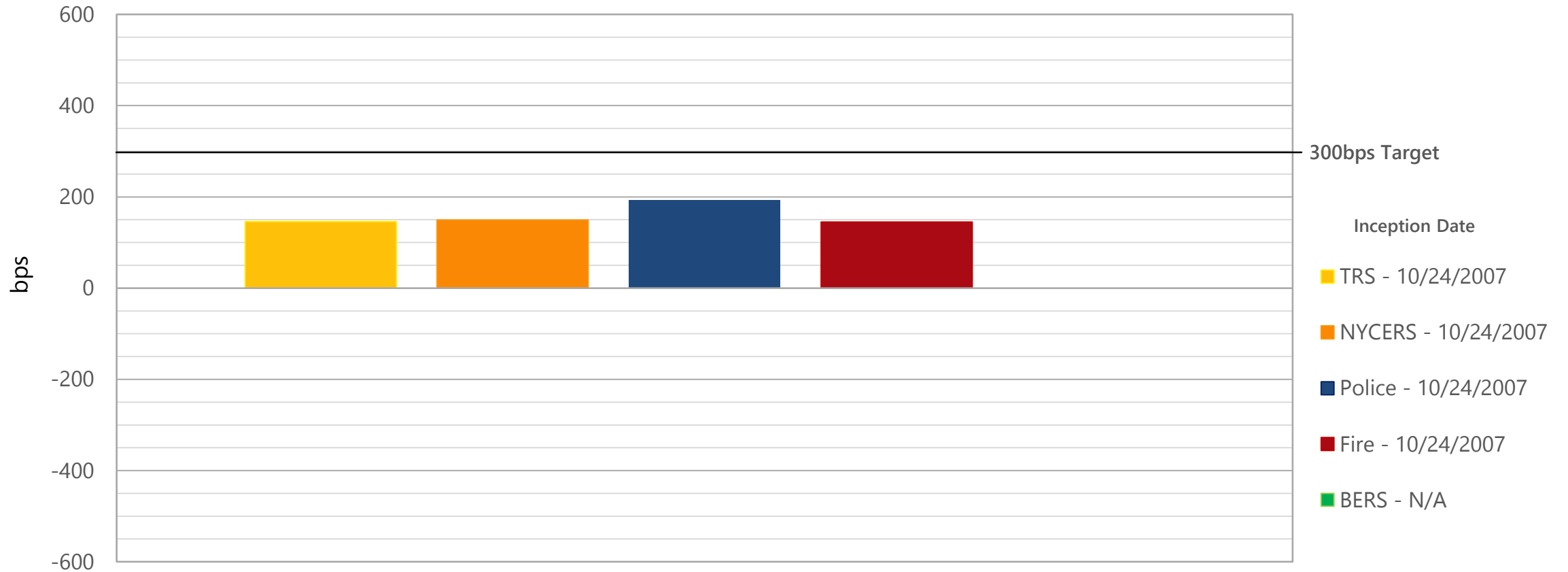
*Performance shown net of fees*

# PRIVATE MARKET DATA



# Value Added - Opportunistic Fixed Income (OFI)

Basis Points of Cumulative IRR above Public Market Equivalent



Excess Return Since Inception; PME Benchmark: 50% JP Morgan Global High Yield 50% CS Leveraged Loans as of 9/30/18

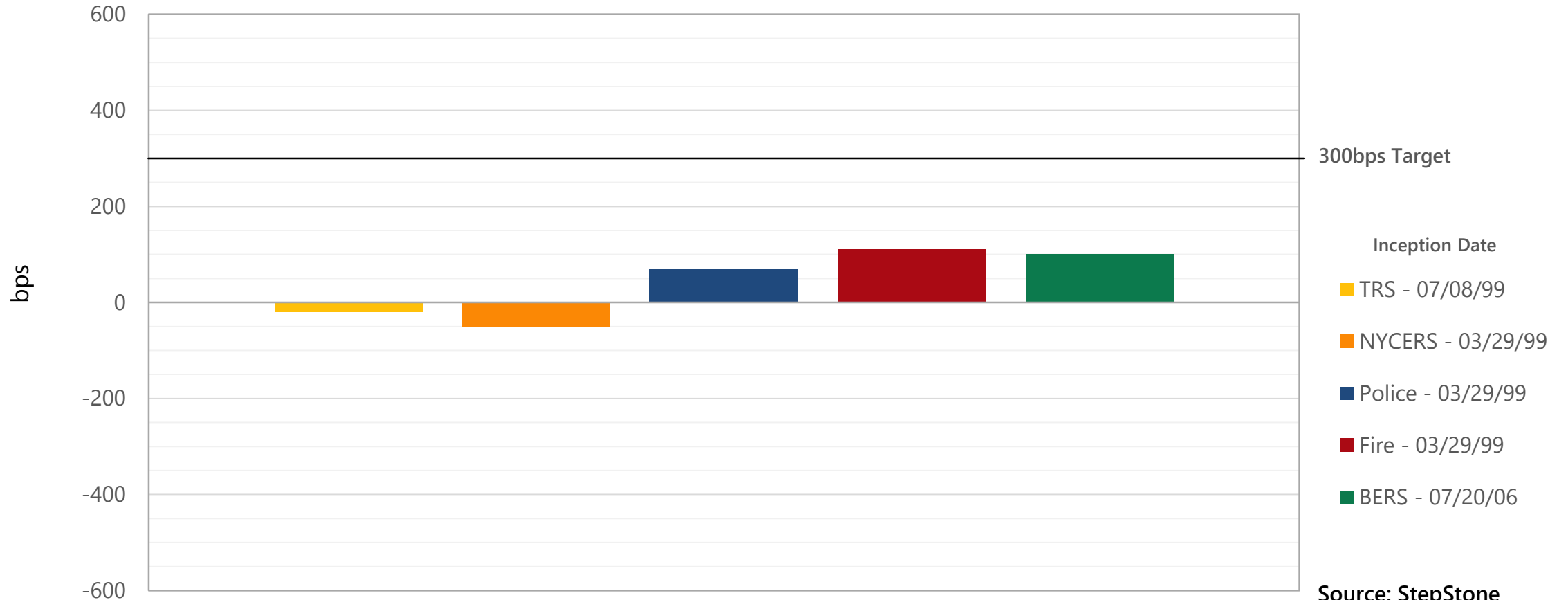
Source: State Street

**The PME Spread is the difference between the IRR and the PME Benchmark.**



# Value Added - Private Equity

**Basis Points of Cumulative IRR above Public Market Equivalent**



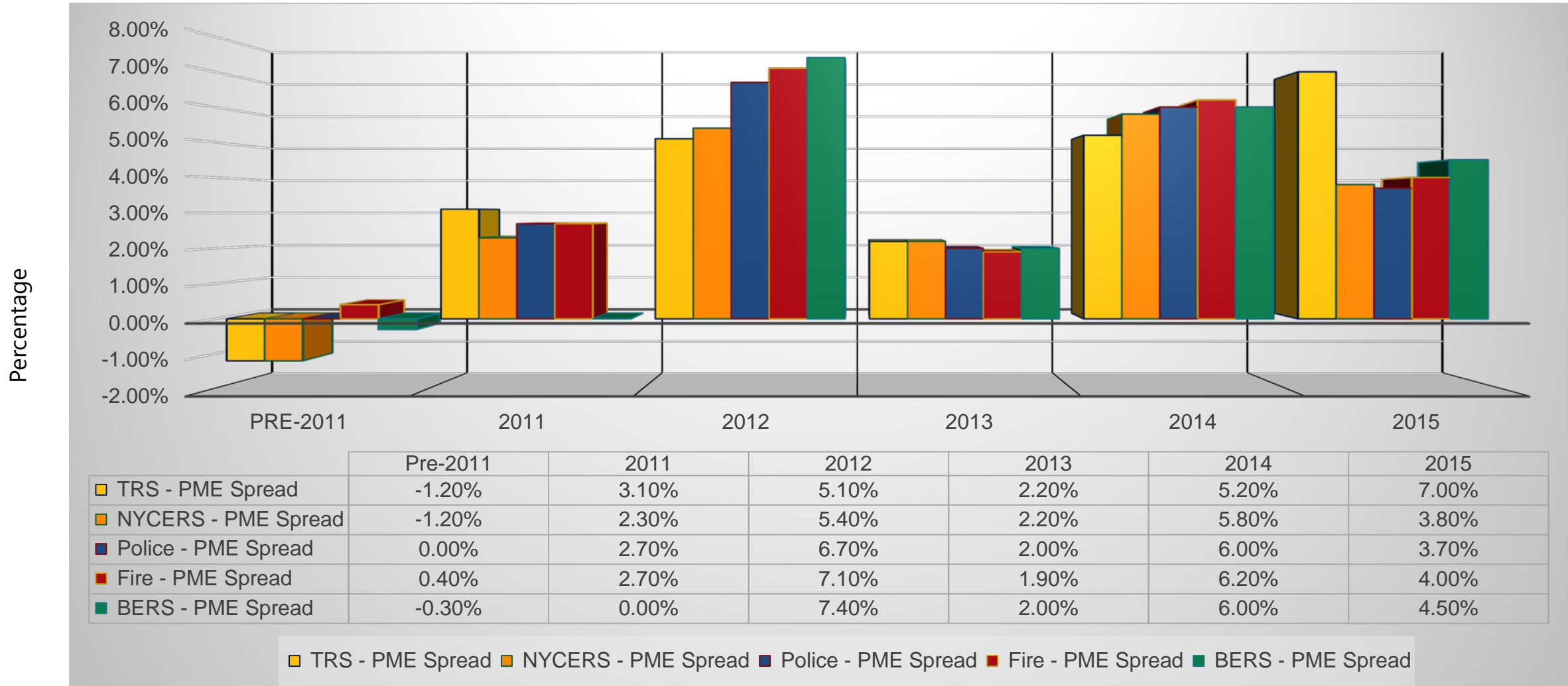
Excess Return Since Inception; The PE Benchmark is the Russell 3000 + 300 bps as of 06/30/18

Source: StepStone Group & Hamilton Lane

**The PME Spread is the difference between the IRR and the PME Benchmark.**



# Private Equity Value Added – PME Spread By Vintage Year as of 06/30/18

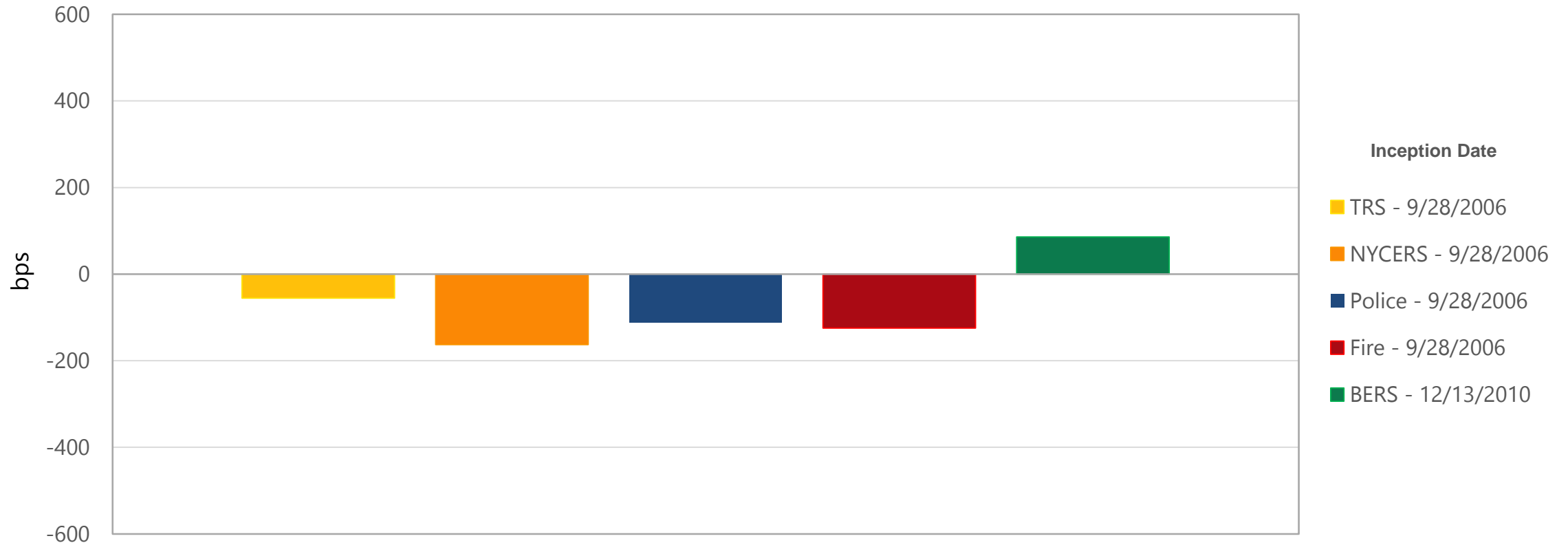


Performance for funds with less than eight (8) quarters of activity is not meaningful

Source: StepStone Group & Hamilton Lane

# Value Added - Private Real Estate - Core

**Basis Points of Cumulative IRR above Public Market Equivalent**



Excess Return Since Inception; Core = 40% Equities Russell 3000 & 60% Barclay Agg. as of 06/30/18

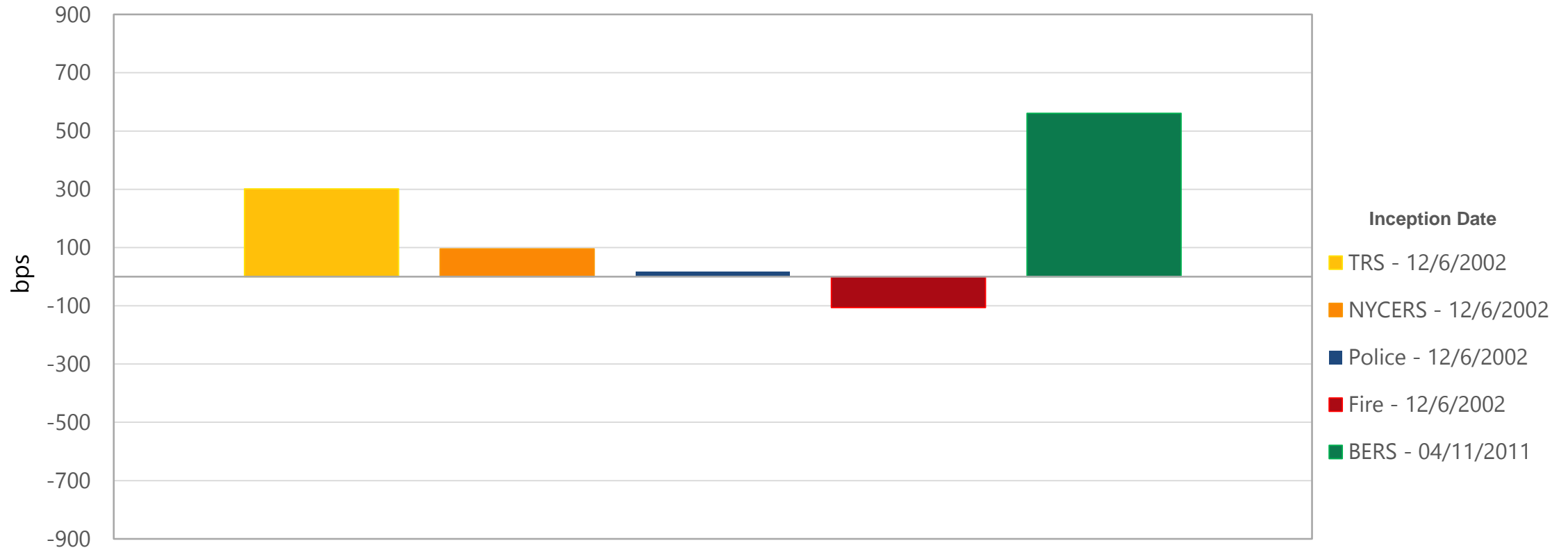
Source: State Street

**The PME Spread is the difference between the IRR and the PME Benchmark.**



# Value Added - Private Real Estate – Non-Core

Basis Points of Cumulative IRR above Public Market Equivalent



Excess Return Since Inception; Non-core = 60% Equities Russell 3000 & 40% Barclay Agg. as of 06/30/18

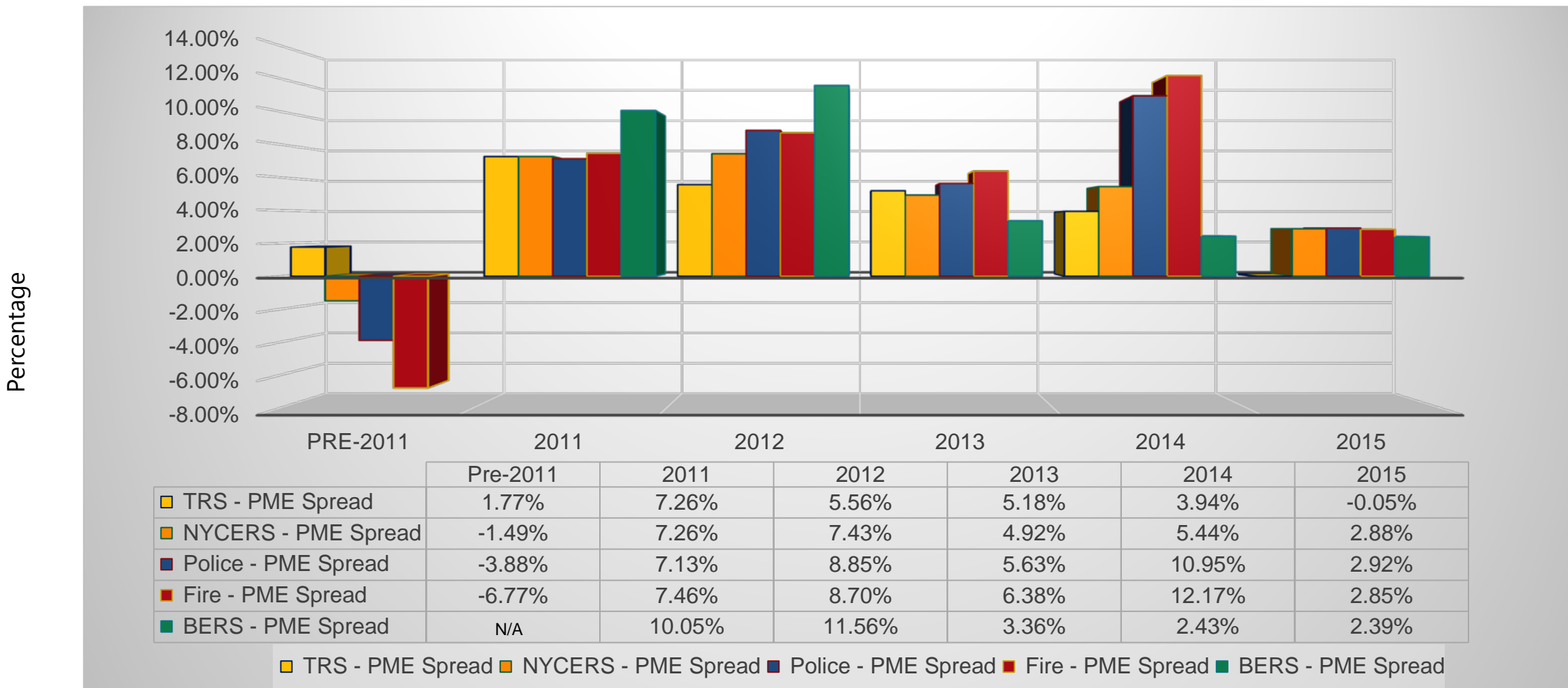
Source: State Street

The PME Spread is the difference between the IRR and the PME Benchmark.





# Private Real Estate (Non-Core) Value Added - PME Spread By Vintage Year as of 06/30/18

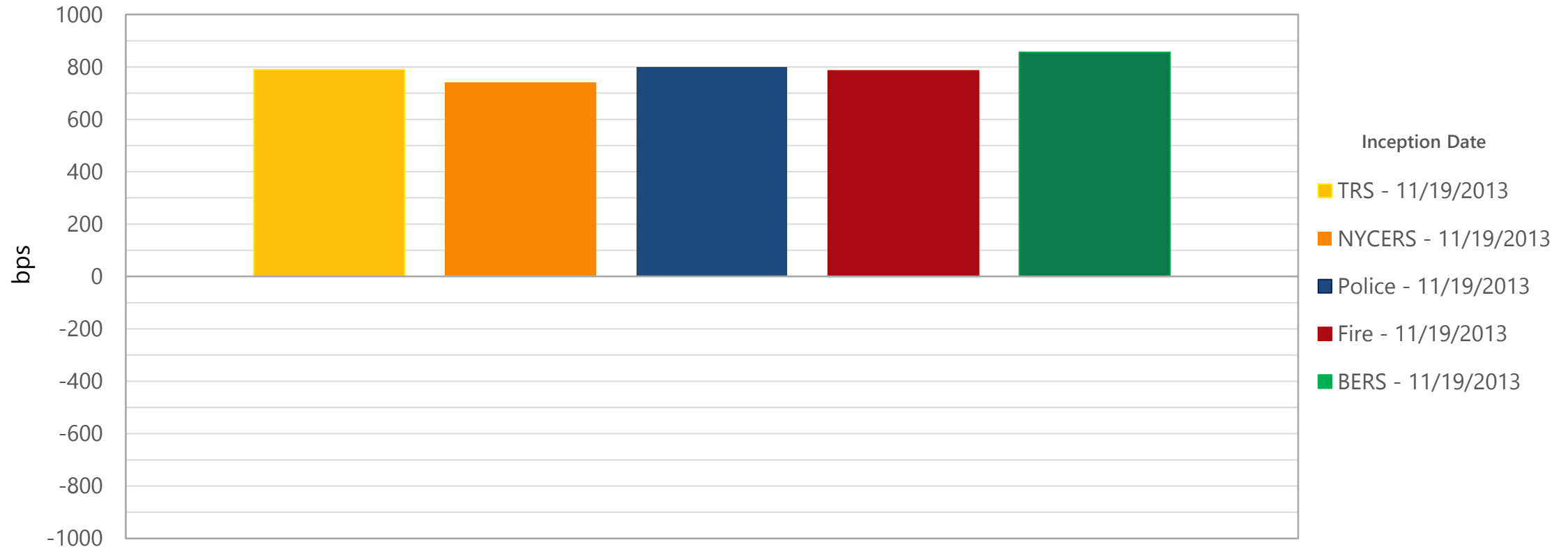


Performance for funds with less than eight (8) quarters of activity is not meaningful

Source: State Street

# Value Added - Infrastructure

**Basis Points of Cumulative IRR above Public Market Equivalent**

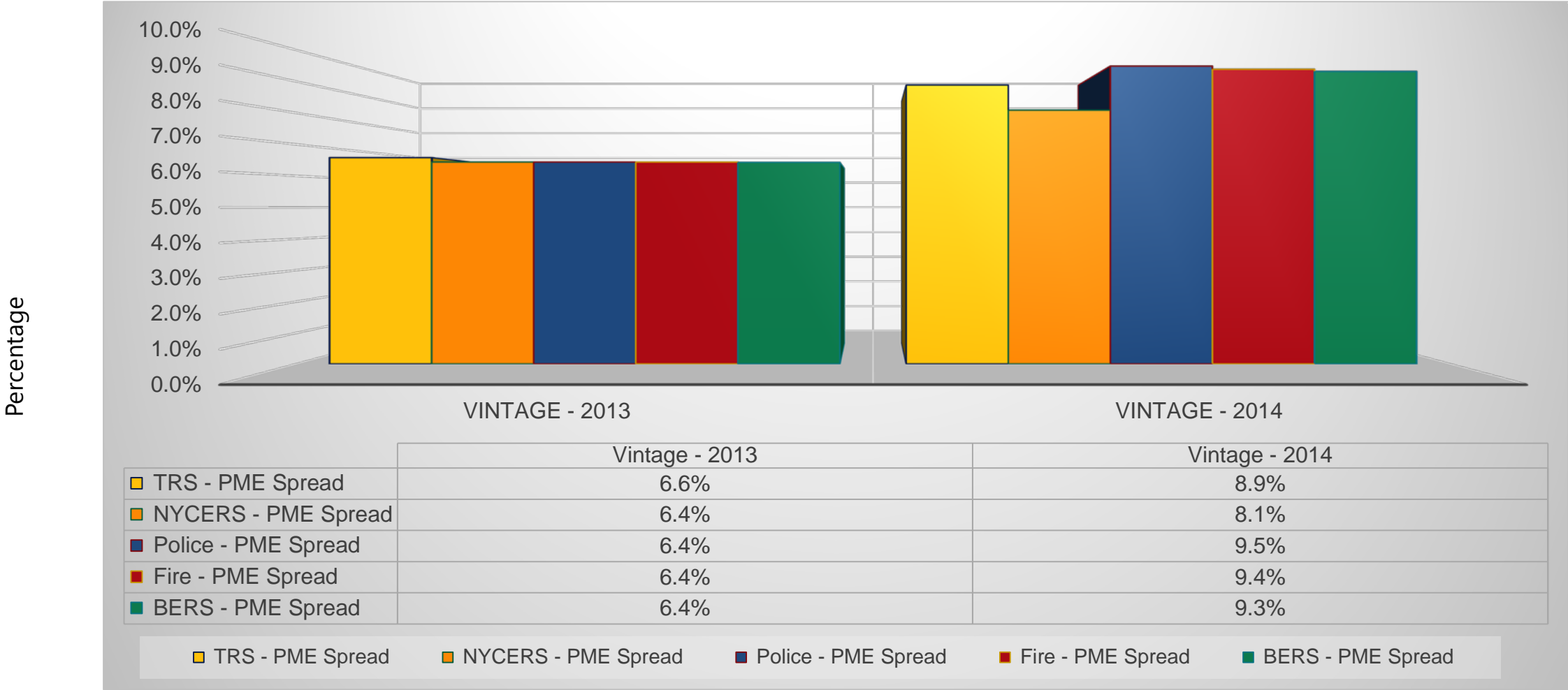


Excess Return Since Inception; PME Benchmark: 50% R3000 & 50% Barclays Agg. as of 06/30/18

Source: StepStone Group

**The PME Spread is the difference between the IRR and the PME Benchmark.**

# Infrastructure Value Added – PME Spread By Vintage Year as of 06/30/18



Source: StepStone Group

**QUESTIONS?**



# **BAM RISK UPDATE AS OF 9/30/2018**

# Total Plan (Public Markets) Risk

## BarraOne Total Plan Summary

COMPANY: NYCERS  
 PORTFOLIO: Total Plan  
 BENCHMARK: POLICY  
 POSITIONS: 25,079

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE:  
 ACCEPTED: 24,797

### Total Plan Summary

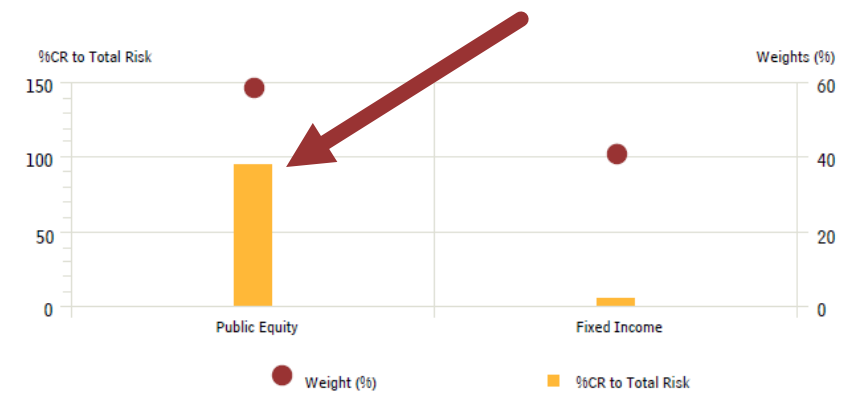
#### Risk Summary

Statistic	Value
Total Risk	6.29
Benchmark Risk	6.86
Active Risk	0.76
Portfolio Beta	0.91
Effective Duration	2.54

#### Asset Class Contribution to Risk

Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
<b>Total</b>		<b>100.00</b>	<b>6.29</b>	<b>6.29</b>	<b>100.00</b>
Public Equity		58.79	10.40	6.00	95.36
Fixed Income		41.21	3.00	0.29	4.64

#### Asset Class Allocation



### Total Plan Summary

#### Risk Summary

Statistic	Value
Total Risk	6.29
Benchmark Risk	6.86
Active Risk	0.76
Portfolio Beta	0.91
Effective Duration	2.54

### Risk Factor Breakdown

#### Risk Decomposition

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
<b>Total Risk</b>	<b>6.29</b>	<b>100.00</b>	<b>1.00</b>	<b>0.76</b>	<b>100.00</b>	<b>1.00</b>
Local Market Risk	5.65	89.82	0.98	0.67	88.83	0.98
Common Factor Risk	5.62	89.35	0.98	0.63	82.94	0.94
Equity	5.34	84.97	0.95	0.35	46.55	0.61
Fixed Income	0.28	4.38	0.22	0.28	36.39	0.50
Selection Risk	0.03	0.47	0.07	0.04	5.89	0.24
Currency Risk	0.64	10.18	0.53	0.08	11.17	0.48

#### Active Risk from Risk Factors



# Public Equity Risk

## BarraOne Equity Summary

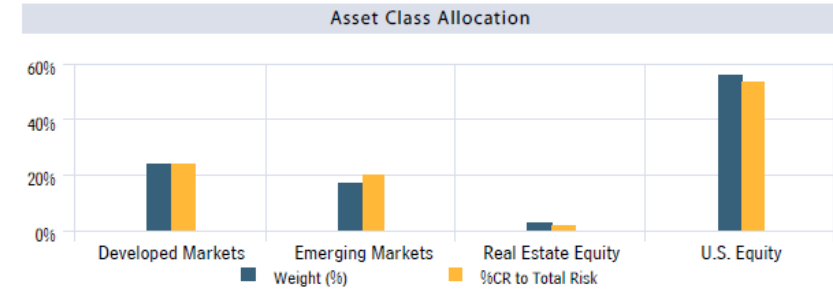
COMPANY: NYCRC  
 PORTFOLIO: Public Equity  
 BENCHMARK: Public Equity  
 POSITIONS: 15,415  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE:  
 ACCEPTED: 15,251

### Total Plan Summary

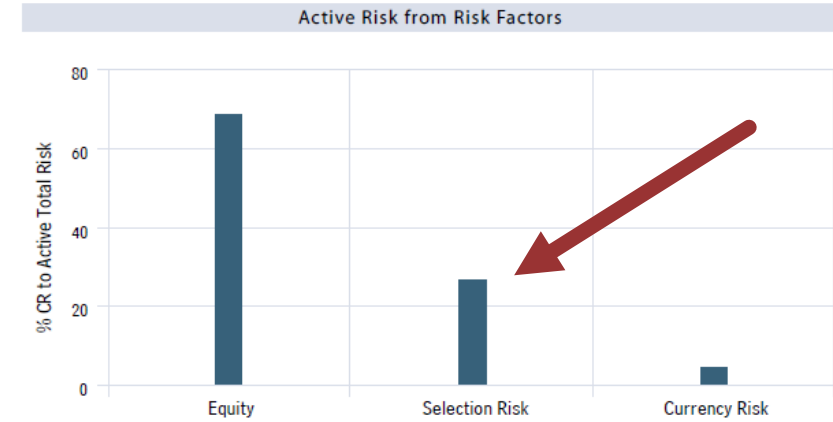
Risk Summary	
Statistic	Value
Total Risk	10.40
Benchmark Risk	10.50
Active Risk	0.54
Portfolio Beta	0.99

Asset Class Contribution to Risk					
Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
<b>Total</b>		<b>100.00</b>	<b>10.40</b>	<b>10.40</b>	<b>100.00</b>
Developed Markets		23.60	11.76	2.52	24.21
Emerging Markets		17.35	14.82	2.13	20.46
Real Estate Equity		3.04	11.36	0.18	1.68
U.S. Equity		56.01	10.59	5.58	53.64



### Risk Factor Breakdown

Risk Decomposition						
Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
<b>Total Risk</b>	<b>10.40</b>	<b>100.00</b>	<b>1.00</b>	<b>0.54</b>	<b>100.00</b>	<b>1.00</b>
Local Market Risk	9.40	90.36	0.98	0.52	95.61	0.97
Common Factor Risk	9.35	89.86	0.98	0.37	68.77	0.82
Equity	9.35	89.86	0.98	0.37	68.77	0.82
Style	0.12	1.13	0.32	0.17	30.98	0.58
Industry	9.23	88.74	0.98	0.21	37.79	0.62
Selection Risk	0.05	0.49	0.07	0.15	26.84	0.52
Currency Risk	1.00	9.64	0.49	0.02	4.39	0.18



### Total Plan Summary

#### Risk Summary

Statistic	Value
Total Risk	10.40
Benchmark Risk	10.50
Active Risk	0.54
Portfolio Beta	0.99

# Public Fixed Income Risk

## BarraOne Fixed Income Summary

COMPANY: NYCRS  
 PORTFOLIO: Fixed Income  
 BENCHMARK: Fixed Income Policy  
 POSITIONS: 9,664  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE:  
 ACCEPTED: 9,546

**Total Plan Summary**

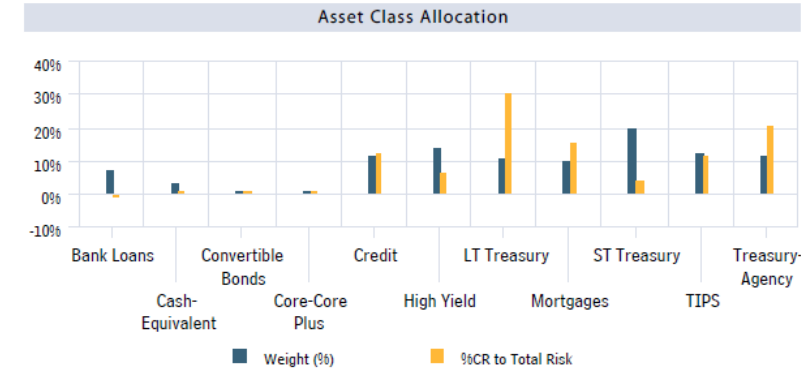
Risk Summary	
Statistic	Value
Total Risk	3.00
Benchmark Risk	4.83
Active Risk	1.95
Portfolio Beta	0.61
Cont. to Eff. Duration	6.16
Convexity	0.76
Yield to Worst (%)	3.23
OAS to Swap (bp)	66.08

**Total Plan Summary**

Risk Summary	
Statistic	Value
Total Risk	3.00
Benchmark Risk	4.83
Active Risk	1.95
Portfolio Beta	0.61
Cont. to Eff. Duration	6.16
Convexity	0.76
Yield to Worst (%)	3.23
OAS to Swap (bp)	66.08

**Asset Class Contribution to Risk**

Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
<b>Total</b>		<b>100.00</b>	<b>3.00</b>	<b>3.00</b>	<b>100.00</b>
Bank Loans		6.71	2.20	-0.00	-0.05
Cash-Equivalent		3.15	0.08	0.00	0.01
Convertible Bonds		0.74	6.20	0.00	0.15
Core-Core Plus		0.93	3.43	0.03	1.04
Credit		11.73	3.36	0.38	12.50
High Yield		13.54	5.15	0.18	5.96
LT Treasury		10.69	9.76	0.91	30.45
Mortgages		9.57	5.30	0.45	15.05
ST Treasury		19.81	0.78	0.10	3.41
TIPS		11.78	3.45	0.34	11.25
Treasury-Agency		11.35	5.98	0.61	20.23



**Risk Factor Breakdown**

**Risk Decomposition**

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
<b>Total Risk</b>	<b>3.00</b>	<b>100.00</b>	<b>1.00</b>	<b>1.95</b>	<b>100.00</b>	<b>1.00</b>
Local Market Risk	3.00	100.00	1.00	1.95	100.00	1.00
Common Factor Risk	3.00	99.93	1.00	1.95	99.87	1.00
Equity	-0.00	-0.04	-0.03	0.01	0.40	0.19
Industry	-0.00	-0.04	-0.03	0.01	0.37	0.18
Fixed Income	3.00	99.97	1.00	1.94	99.47	1.00
Nominal Rates	2.50	83.16	0.89	1.97	101.26	0.99
Real Rates	0.34	11.27	0.83	0.11	5.55	0.72
Credit	0.17	5.54	0.14	-0.14	-7.34	-0.44





# Risk Summary

- Relative to the prior quarter, ex-ante risk declined due to a reduction in anticipated volatility.
- The Public Markets investment portfolios generally exhibit less risk than the policy benchmark portfolios.
- Public Equity is the major driver of overall volatility.
- Public Fixed Income continues to exhibit relatively high tracking error (measured by Active Risk) owing to tactical tilts and the use of active managers.



# Standard Total Plan (Public Markets) Stress Tests

## BarraOne Total Plan Summary

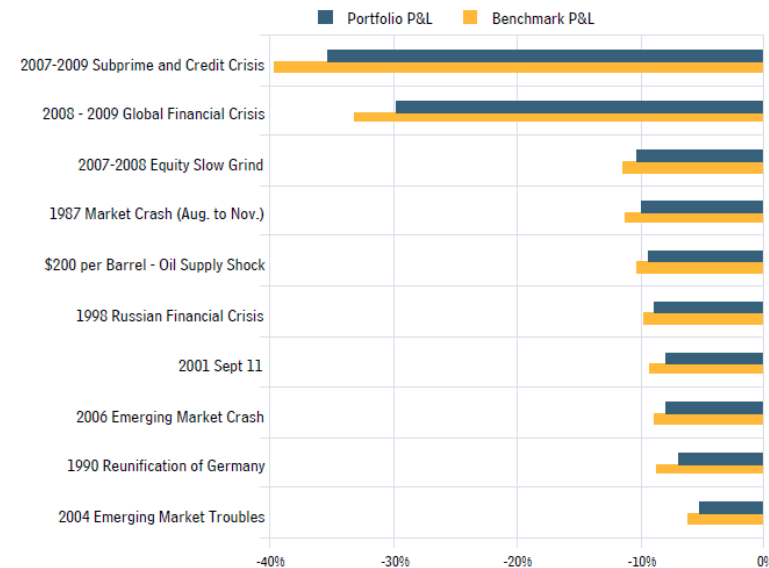
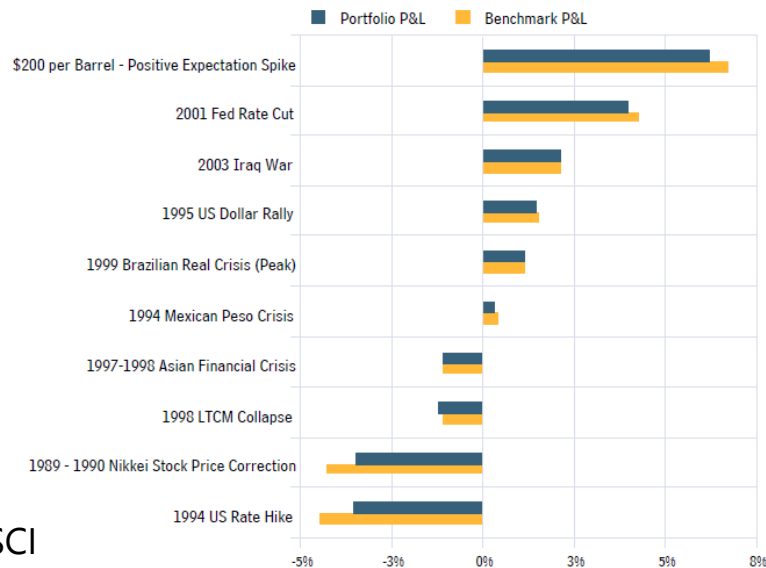
COMPANY: NYCRS  
 PORTFOLIO: Total Plan  
 BENCHMARK: POLICY  
 POSITIONS: 25,079  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE:  
 ACCEPTED: 24,797

### Stress Scenarios

Top 10 Best Scenarios			
Scenario	Portfolio P&L	Benchmark P&L	Market Change (\$)
\$200 per Barrel - Positive Expectation S	6.25	6.71	
2001 Fed Rate Cut	3.98	4.28	
2003 Iraq War	2.11	2.16	
1995 US Dollar Rally	1.44	1.52	
1999 Brazilian Real Crisis (Peak)	1.15	1.13	
1994 Mexican Peso Crisis	0.32	0.45	
1997-1998 Asian Financial Crisis	-1.07	-1.08	
1998 LTCM Collapse	-1.22	-1.08	
1989 - 1990 Nikkei Stock Price Correctio	-3.48	-4.30	
1994 US Rate Hike	-3.53	-4.44	

Top 10 Worst Scenarios			
Scenario	Portfolio P&L	Benchmark P&L	Market Change (\$)
2007-2009 Subprime and Credit Crisis	-35.34	-39.59	
2008 - 2009 Global Financial Crisis	-29.65	-33.13	
2007-2008 Equity Slow Grind	-10.28	-11.42	
1987 Market Crash (Aug. to Nov.)	-9.96	-11.12	
\$200 per Barrel - Oil Supply Shock	-9.43	-10.23	
1998 Russian Financial Crisis	-8.89	-9.77	
2001 Sept 11	-7.90	-9.24	
2006 Emerging Market Crash	-7.86	-8.89	
1990 Reunification of Germany	-6.88	-8.60	
2004 Emerging Market Troubles	-5.30	-6.18	



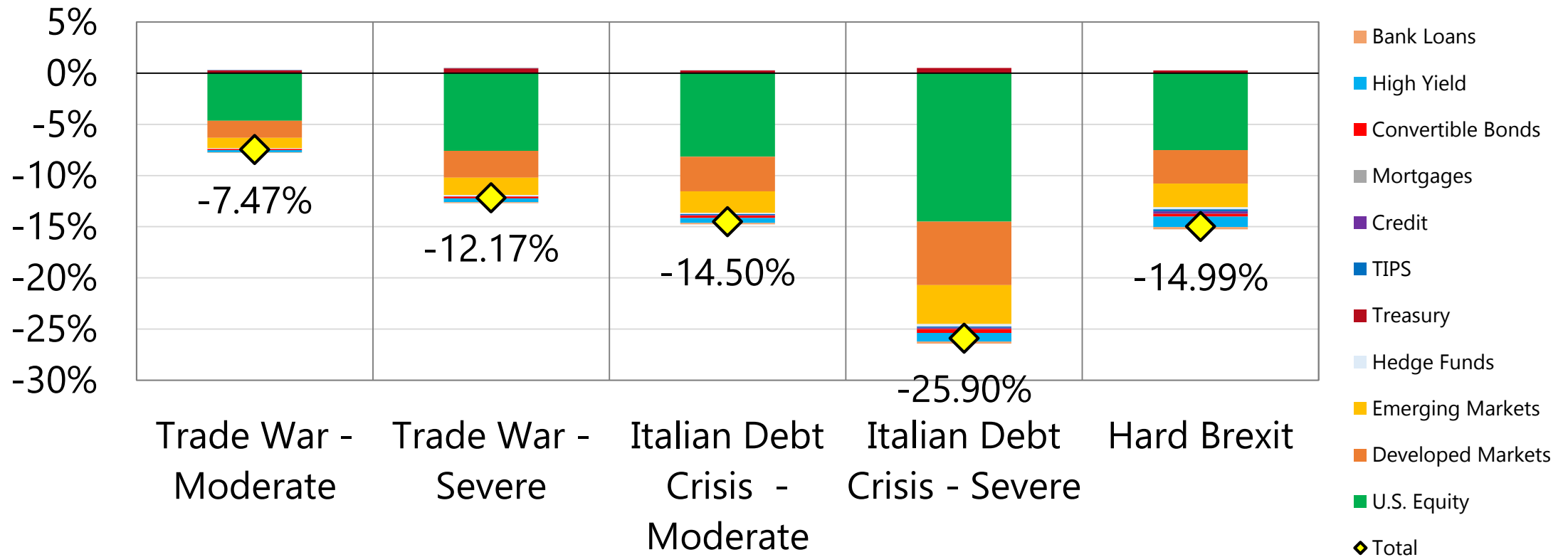
Source: BAM and MSCI

Source: BAM, MSCI (analytics) and State Street (holdings data)



# Customized Total Plan (Public Markets) Stress Scenarios

The table below summarizes a sample of customized stress scenarios for one Total Plan (Public Markets) portfolio

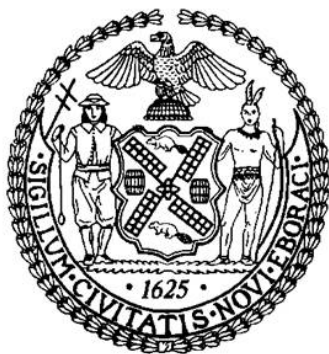


**QUESTIONS?**



**SUPPLEMENTAL MATERIAL -  
PERFORMANCE REPORTING (Public):**

Total Fund Overview (Public):



New York City  
Employees' Retirement System  
Performance Overview as of September 30, 2018

# Total Fund Overview



## **New York City Employees' Retirement System**

### **Table of Contents:**

<b>Consultant's Commentary &amp; Performance Charts</b>	<b>p.3</b>
<b>Appendix A - Consolidated Performance Report</b>	<b>p.29</b>
<b>Appendix B - Public Markets Manager Performance Detail</b>	<b>p.39</b>
<b>Appendix C - Alternative Assets Manager Performance Detail</b>	<b>p.52</b>
<b>Appendix D - Footnote</b>	<b>p.63</b>



**City of New York Employees' Retirement System  
Third Quarter 2018 Summary**

**General Economic and Market Conditions:** September 20<sup>th</sup> marked the capstone of a summer run-up in the U.S. equity market. We saw a true market correction in February (S&P 500 Index down 10.1%) and a drawdown of more than 7% in March, but the memory of those experiences was obliterated by a smooth, steady climb, with the S&P 500 gaining 12% in the first three quarters. Economic reports came in mixed for most economies outside the U.S. during 2018, but the U.S. economy has been firing on all cylinders, with the job market, investment, and output all showing robust gains. GDP grew 3.5% in the third quarter and 4.2% in the second. The accompanying run-up in the equity market buoyed confidence that all was not just well, but great, and this economic expansion and bull market still had fresh legs to keep going. If only we knew in September what Halloween fright awaited us in October.

Since the start of the year, investors had been growing increasingly concerned that the expansion was getting long in the tooth, and that both the economy and the stock market must be nearing peaks. While elapsed time is not an economic variable, the fact that the current expansion set a record for length heightened fears of a downturn. Richly priced capital markets across all asset classes and a new peak in the level of corporate earnings reported during the summer earnings season suggested that a market correction was inevitable. Through the end of September, such fears contrasted with the continuing stream of good economic news, and the market roared. The unemployment rate dropped to 3.7% in September, the lowest since 2000. Wages continue to inch up, with average hourly earnings growth rising from 2% toward 3%. While potentially inflationary and certainly a cost to business, stronger wage growth kept consumer spending robust, and boosted consumer (and business) confidence.

Against this backdrop, the Fed raised rates three times in 2018, bringing the Fed Funds rate to 2.0-2.25%. The Fed expects one more rate hike this year and three in 2019. The Fed has now raised rates 200 basis points over the past two years. Since inflation has not changed over this period, real rates have essentially risen by 2 percentage points. Much of the growth in the first half of 2018 was attributed to the tax cut and spending, and trade activity in advance of tariffs imposed in July by the U.S. and China. Monetary policy has incrementally become a more significant headwind, and it began showing up in the third quarter. While it is true that real rates are low relative to history, the change in rates is important. Since the mid-1980s real rates have risen by 2 percentage points four times; three of those occurrences resulted in recessions. In a study by Capital Economics, monetary policy tightening was a major contributing factor in 29 out of 45 recessions in G7 countries since 1960.

Higher interest rates are beginning to squeeze some of the most rate-sensitive segments of the economy. Housing has been an ongoing mystery; starts surged to an 11-year high in May, only to stall during the summer. Home sales are also clearly feeling the pressure of

Through September 30, 2018

---

higher rates, and from the supply side, a shortage of houses. Residential investment contracted by 4% in the third quarter, following declines in each of the first two quarters. Home prices rose substantially in certain markets through the summer, but early indications are that rates began to crimp prices and sales in September. Housing can often be the canary in the coal mine: an early indicator of slowing economic activity and lower confidence.

Inflation had been gradually trending up, reaching 2.9% in June, finally fulfilling the expectations of many market observers, but the year-over-year gain in the CPI slowed to 2.3% in the third quarter. Much of the rise in the first half was attributable to a rebound in oil prices. Once oil prices stabilize as expected, the increase in inflation will likely abate. One reason for the stability of inflation is the growing dominance of services in the inflation calculation. The services inflation rate has been much steadier than the goods rate and consistently positive near 2%. Goods prices are more volatile and much more influenced than services by factors such as trade, currency, supply and demand of raw materials, and geopolitics.

Related to goods prices, the ISM manufacturing index had reached a 14-year high earlier this year, but fell back in September, as manufacturers and exporters face the triple threat of a stronger dollar (up 8% since mid-April), the imposition of tariffs in July and anticipation of more in October, and weakening of global growth.

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

**Total Fund Performance:** For the quarter ended September 30, 2018, the Fund returned +2.87%, seventeen basis points below the Policy Target return of +3.04%. Over the trailing year, NYCERS has earned a return of +7.82% versus the Policy Target return of +7.53%. Over three years, the total Fund has returned +10.53% annualized. Over the trailing five years, the Fund has gained 8.29% annualized. The trailing 10-year return is +8.34% annualized.

**Total Fund Assets:** The Fund's assets totaled \$66.3 billion as of the end of the third quarter of 2018.

**U.S. Equity:** The total domestic equity portion of the NYCERS Fund returned +7.02% for the quarter, below the +7.12% return of the Russell 3000 Index. For the trailing year, NYCERS underperformed the index, returning +17.47% versus +17.58% for the index. The Fund is below the benchmark over the trailing three, five, seven, and ten year periods. The passive portfolio bested the active one over the quarter as well as the trailing one, three, five, seven, and ten year return periods.

Through September 30, 2018

---

In Large Cap, the Fund underperformed the Russell 1000 Index, returning +7.40% versus the Russell 1000's return of +7.42% during the third quarter.

In Small Cap, the Fund returned +3.32%, below the Russell 2000 return of +3.58% for the quarter. The Fund's one year return of +15.15% underperformed the +15.24% return of the Index.

**Developed International:** For the quarter, the Fund's Non-U.S. Developed Equity composite returned 0.97% (excluding NYCERS' non-U.S. Environmental manager), underperforming the Custom MSCI World ex-US Benchmark by 1 basis point. The Fund returned +5.21% for the trailing one year period, above the return of the benchmark (+3.01%). The Fund is above the benchmark over the trailing three, five, seven, and ten year periods.

**Emerging Markets Equity:** The Fund's emerging markets equity composite returned +1.52% in the quarter, underperforming the +1.98% return of the FTSE NYCERS custom benchmark. The passive portfolio outperformed the active one for the quarter. The one year return for the emerging markets composite is -1.64%, underperforming the -0.69% return for the benchmark. The Fund is below the benchmark over the trailing three and five year periods and ahead of the benchmark over the trailing seven and ten year periods.

**Core Fixed Income:** The composite of the Fund's core program returned -0.23% during the quarter, while the NYCERS Core Plus Five Index returned +0.02%. For the past year, the core composite has returned -1.54%, while the benchmark's return is -1.44%. The Fund is ahead of the benchmark over the trailing three, five, seven, and ten year periods.

**TIPS:** The Fund's TIPS composite delivered a -0.83% return in the quarter, slightly below the -0.82% return for the Bloomberg Barclays Capital US TIPS Index. Over the past year, the Fund's TIPS managers have returned +0.43%, above the benchmark's return of +0.41%. The Fund is ahead of the benchmark over the trailing three, five, seven, and ten year periods.

**High Yield:** In high yield, the Fund's managers returned +2.20% for the quarter, while the FTSE BB&B Index posted a higher return of +2.40%. The Fund underperformed the benchmark over the past year, returning +2.52% as compared to the benchmark's return of +2.84%. The Fund is behind the benchmark over the trailing three year period and ahead of the benchmark over the trailing five, seven, and ten year periods.

Through September 30, 2018

---

**Bank Loans:** The NYCERS bank loan composite returned +2.05% in the third quarter, above the Credit Suisse Leveraged Loan Index's return of +1.93%. The Fund underperformed the benchmark for the year returning +5.55% versus +5.58% for the benchmark. The Fund has outperformed the benchmark over the trailing three and five year periods.

**Convertibles:** The convertible portfolio returned +2.65% in the quarter, above the +1.67% return of the NYCERS Custom Convertible Bond Index. Over the past year, the convertibles portfolio has returned +7.10%, underperforming the benchmark by 101 basis points. The Fund underperformed the custom benchmark over the trailing three year period and is ahead of the benchmark over the trailing five, seven and ten year periods.

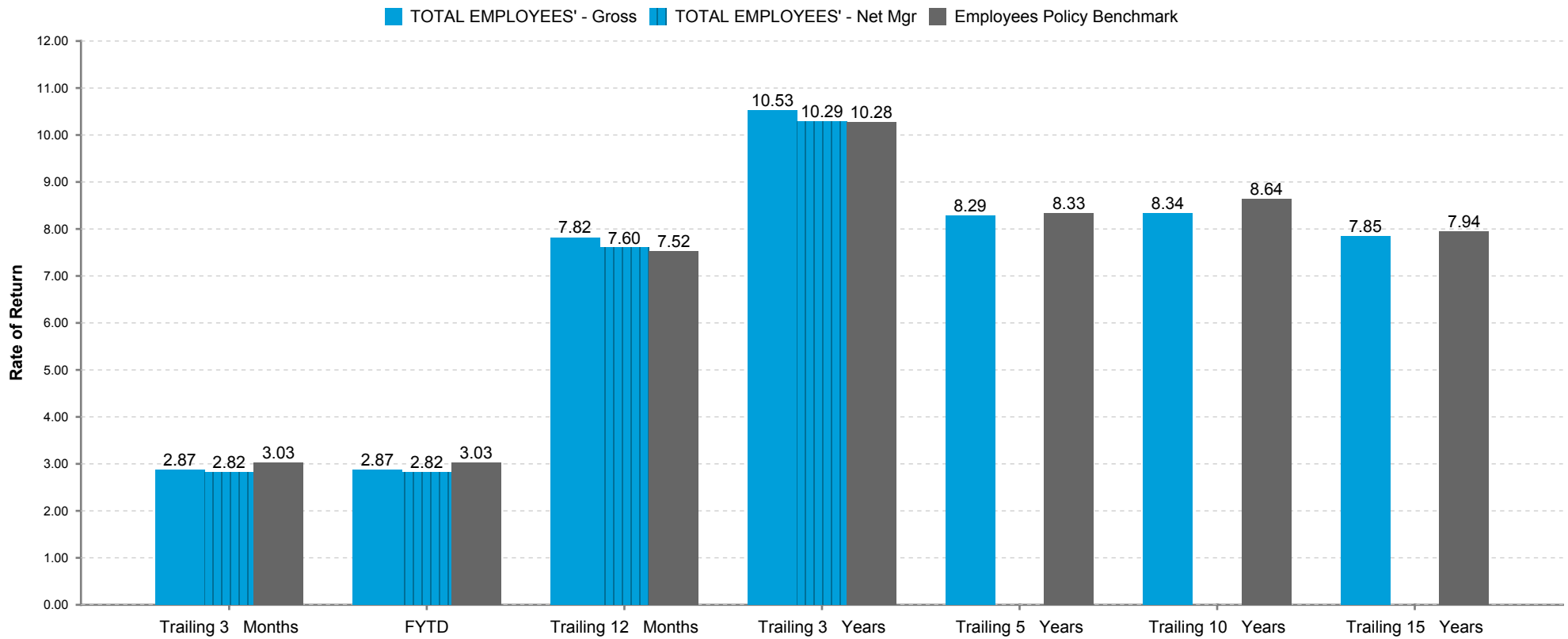
**Opportunistic Fixed Income:** The opportunistic fixed income composite returned +2.57% over the third quarter, underperforming the blended benchmark of 50% JP Morgan Global High Yield / 50% Credit Suisse Leveraged Loan Index - Plus 300 bps (+2.81%). The Fund returned +7.89% for the trailing one year period, above the return of the blended benchmark (+7.16%). The Fund is below the blended benchmark over the trailing three, five, seven, and ten year periods.

**Alternatives:** For the quarter, the Private Equity portfolio had approximately \$4.6 billion in invested capital, representing roughly 6.9% of the Total Fund. The Private Real Estate portfolio had approximately \$3.4 billion invested, accounting for roughly 5.2% of the Total Fund. The Infrastructure portfolio had approximately \$464 million invested, or 0.7%. Hedge Fund investments represented approximately \$38 million, or 0.1%. Performance is reported separately by NYCERS' Private Equity, Real Estate and Hedge Fund consultants.

**Market Value (Billions)**

TOTAL EMPLOYEES'

\$66.3

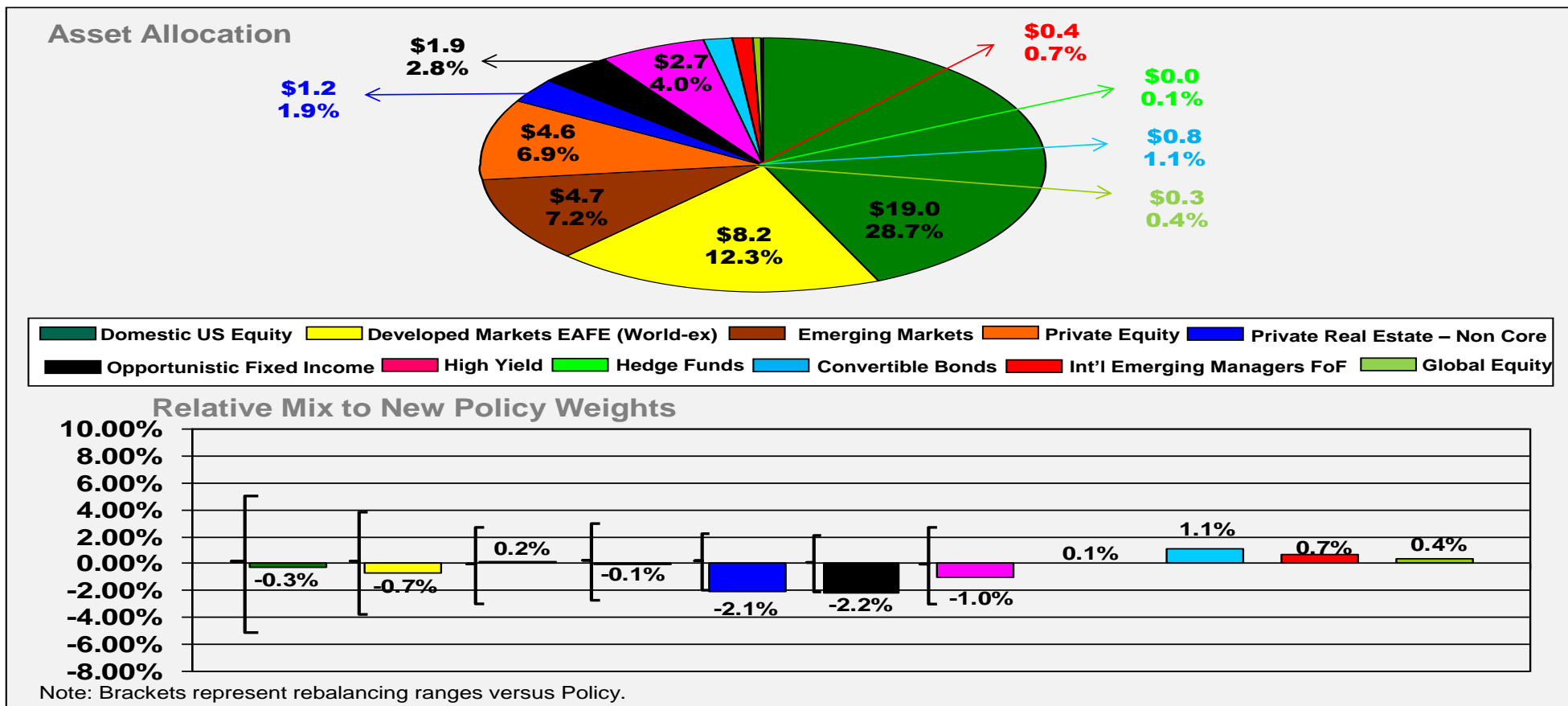


	Plan 3 Years	Benchmark 3 Years	Plan 5 Years	Benchmark 5 Years	Plan 10 Years	Benchmark 10 Years
<b>Standard Deviation</b>						
TOTAL EMPLOYEES'	5.0	4.9	8.3	5.1	9.2	10.0



**Portfolio Asset Allocation: September 30, 2018**

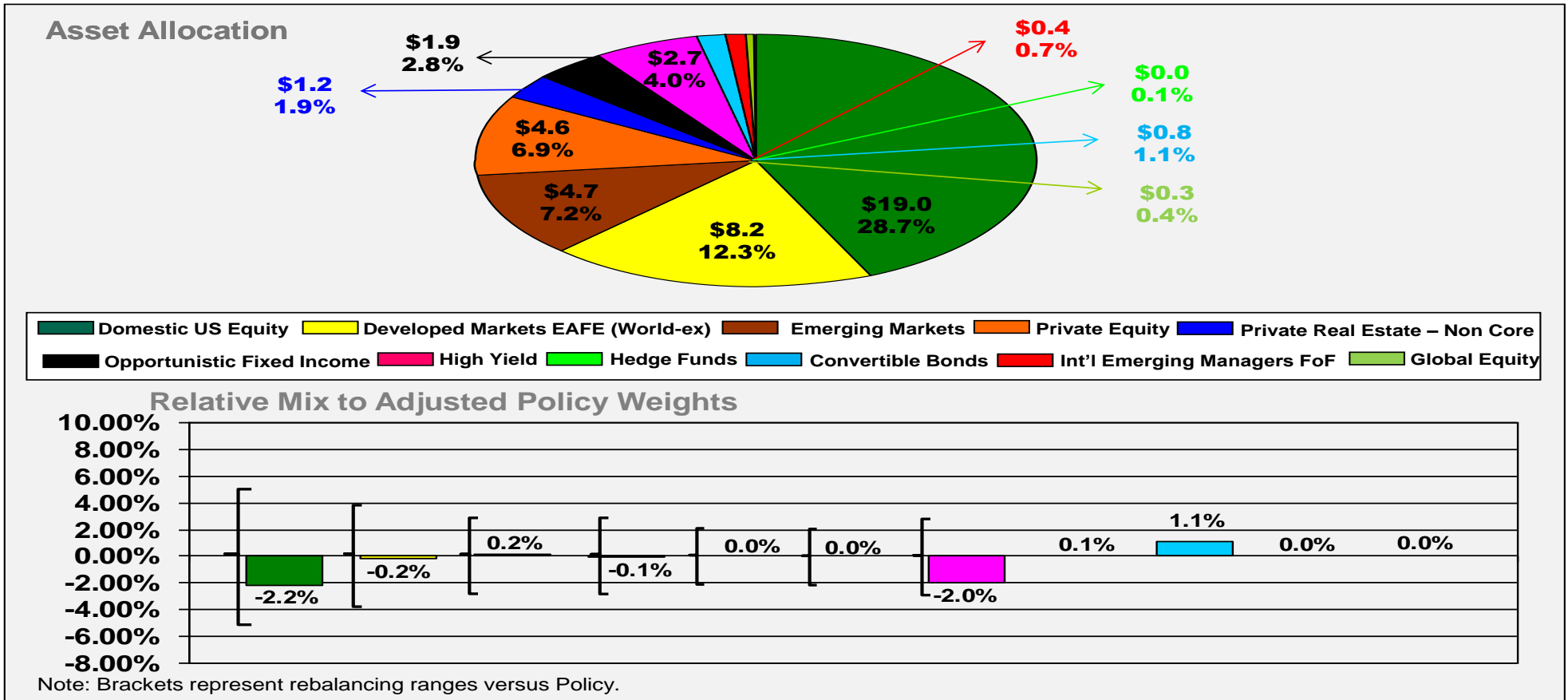
**Portfolio Asset Allocation – Growth**





**Portfolio Asset Allocation: September 30, 2018**

**Portfolio Asset Allocation – Growth**

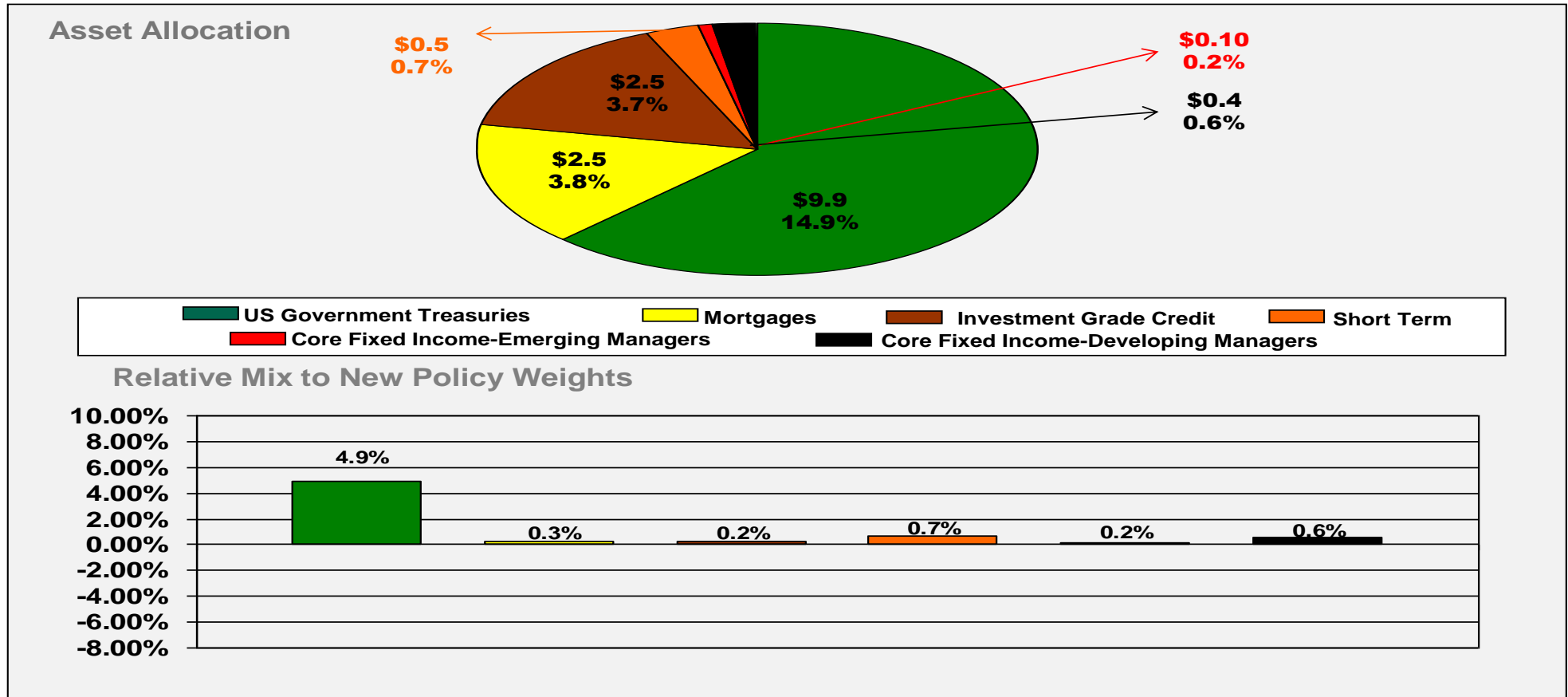


Note: On September 28, 2018 NYCERS' combined Fixed Income and Cash portfolios have a duration of 5.4 years. The duration of the Barclays US Aggregate Index was 6 years on that date.



**Portfolio Asset Allocation: September 30, 2018**

**Portfolio Asset Allocation – Deflation Protection**

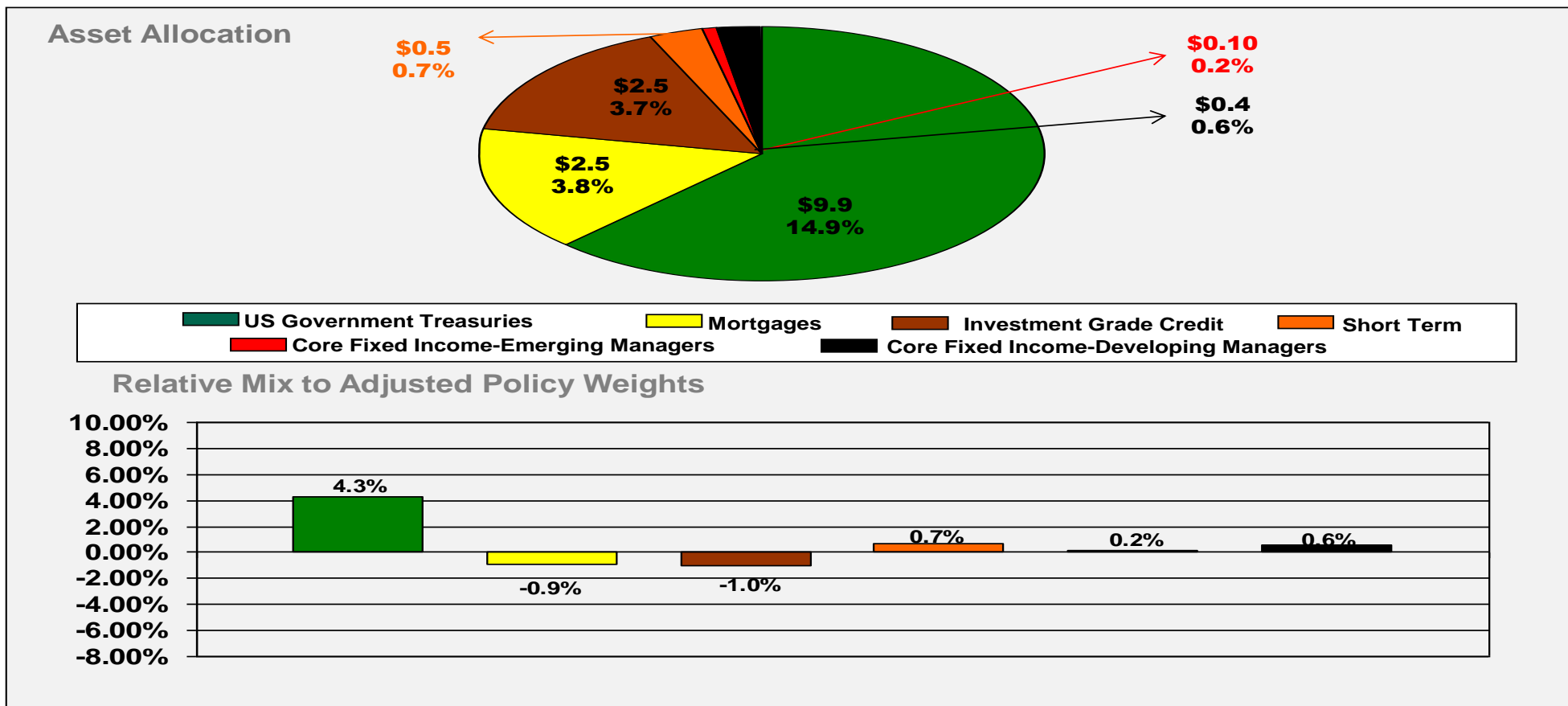






**Portfolio Asset Allocation: September 30, 2018**

**Portfolio Asset Allocation – Deflation Protection**



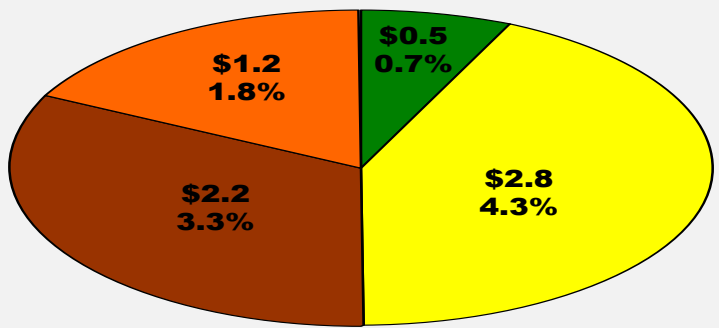
Note: On September 28, 2018 NYCERS' combined Fixed Income and Cash portfolios have a duration of 5.4 years. The duration of the Barclays US Aggregate Index was 6 years on that date.



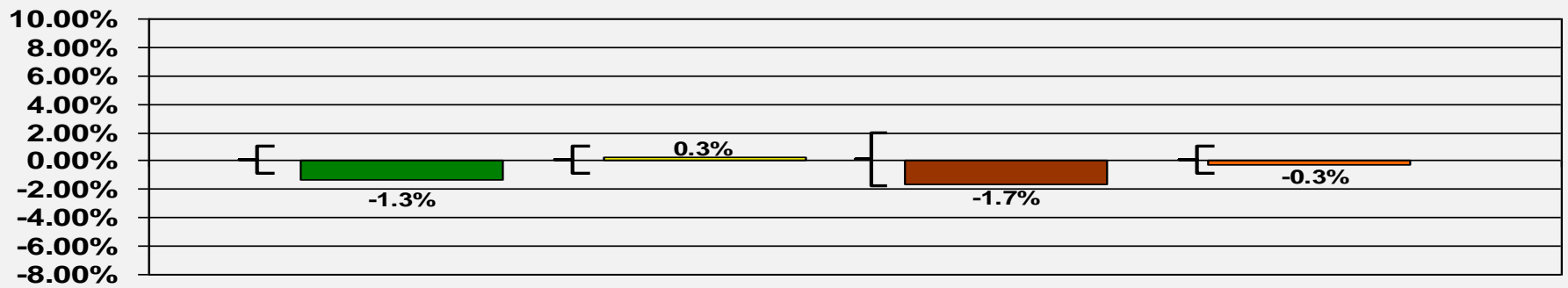
**Portfolio Asset Allocation: September 30, 2018**

**Portfolio Asset Allocation – Inflation Protection**

Asset Allocation



Relative Mix to New Policy Weights

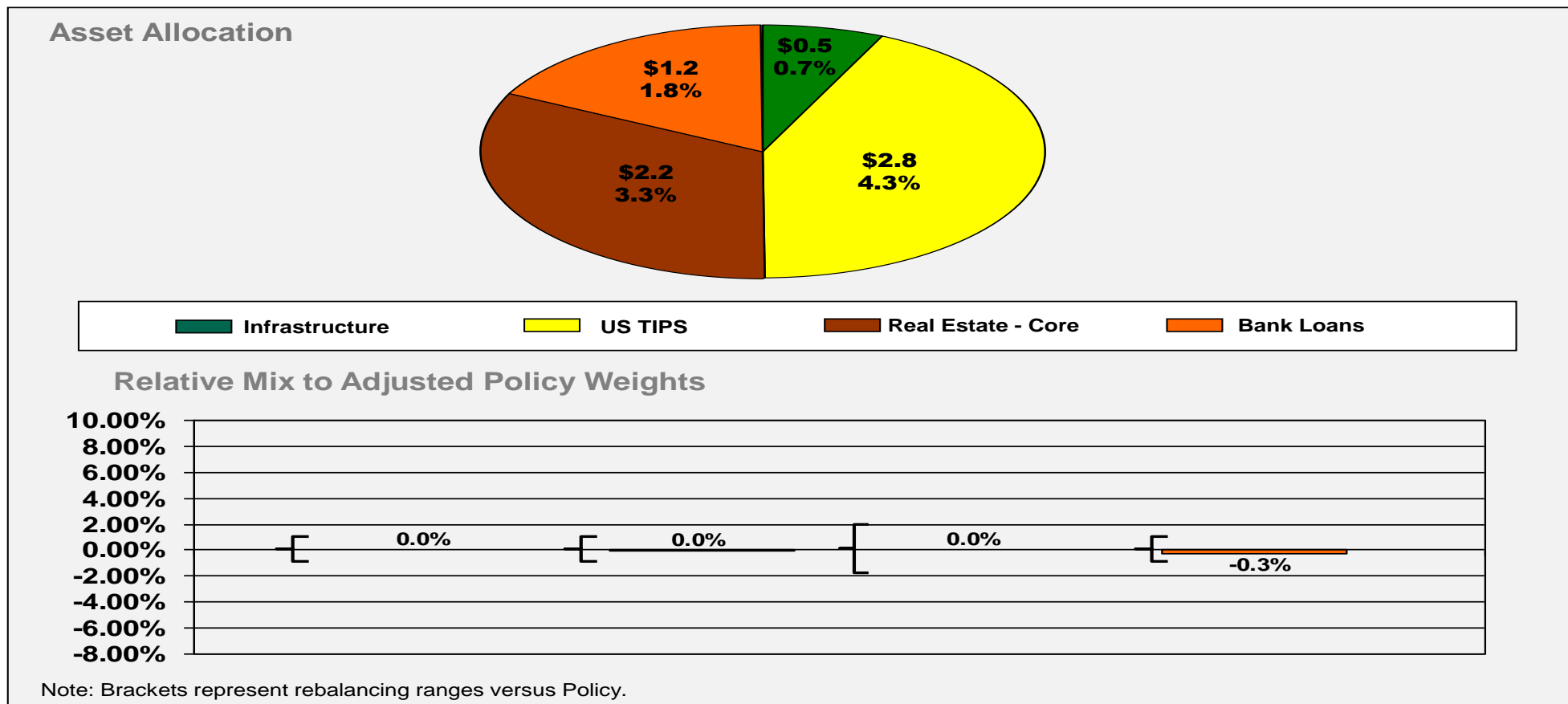


Note: Brackets represent rebalancing ranges versus Policy.

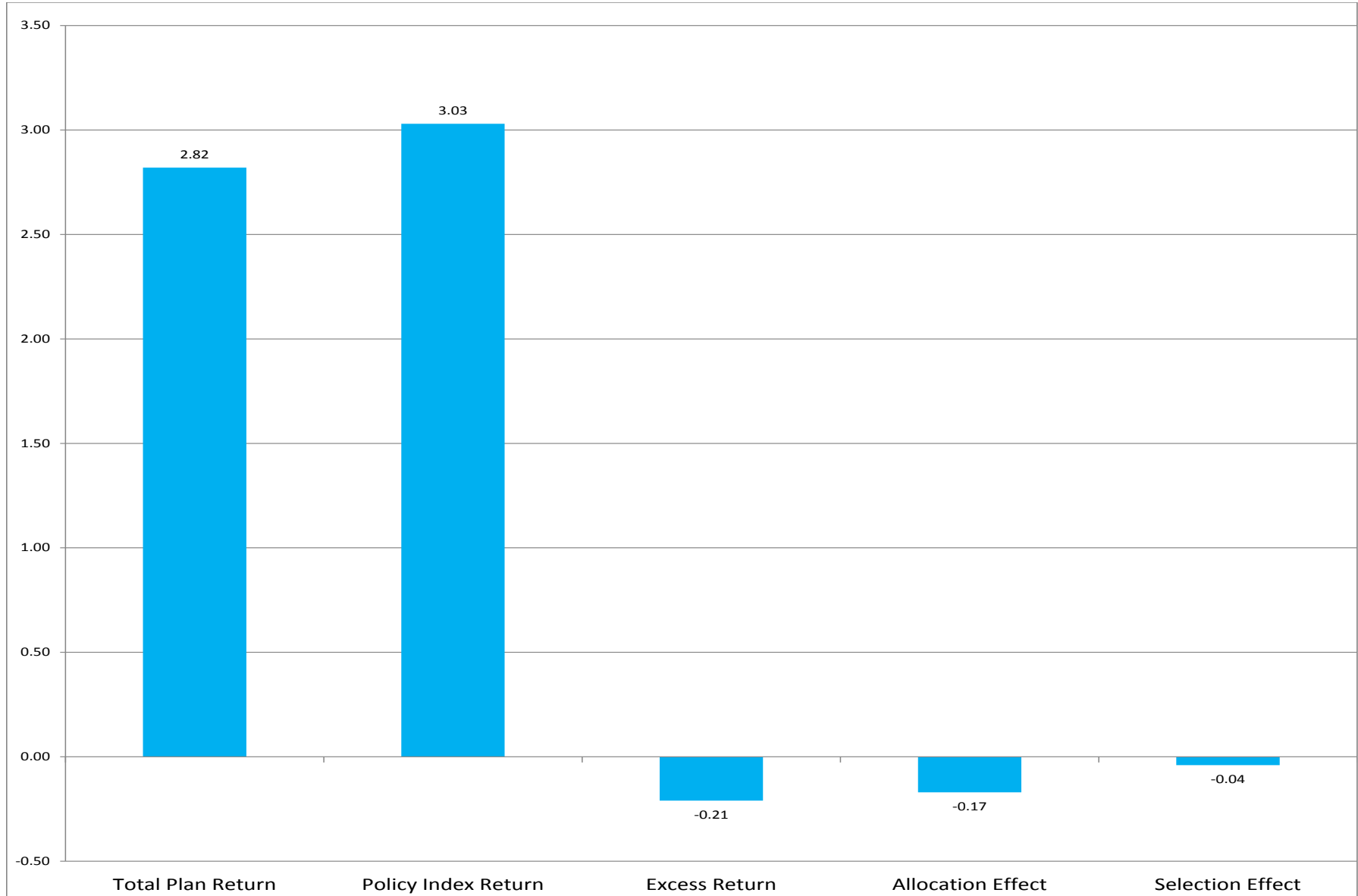


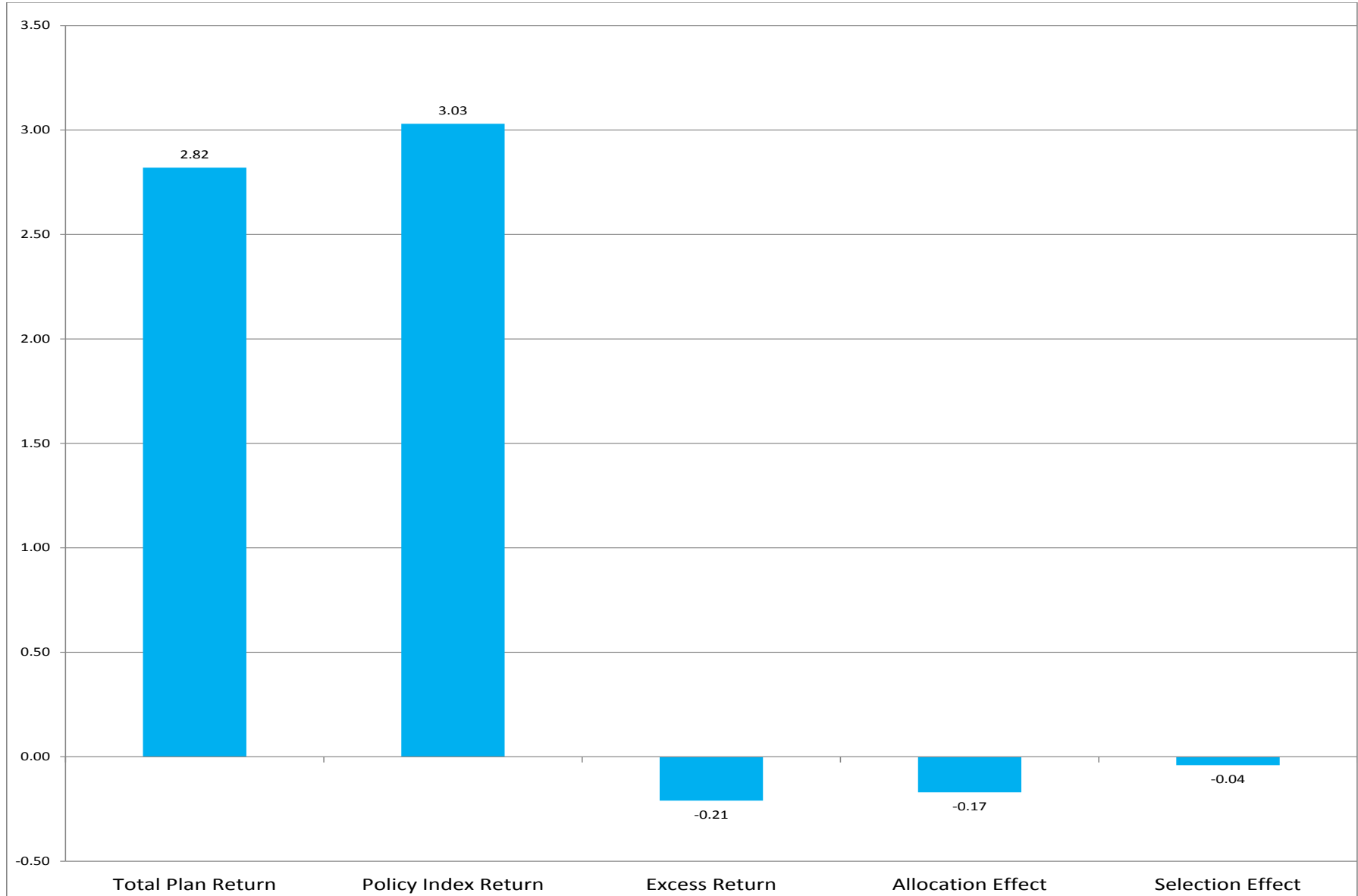
**Portfolio Asset Allocation: September 30, 2018**

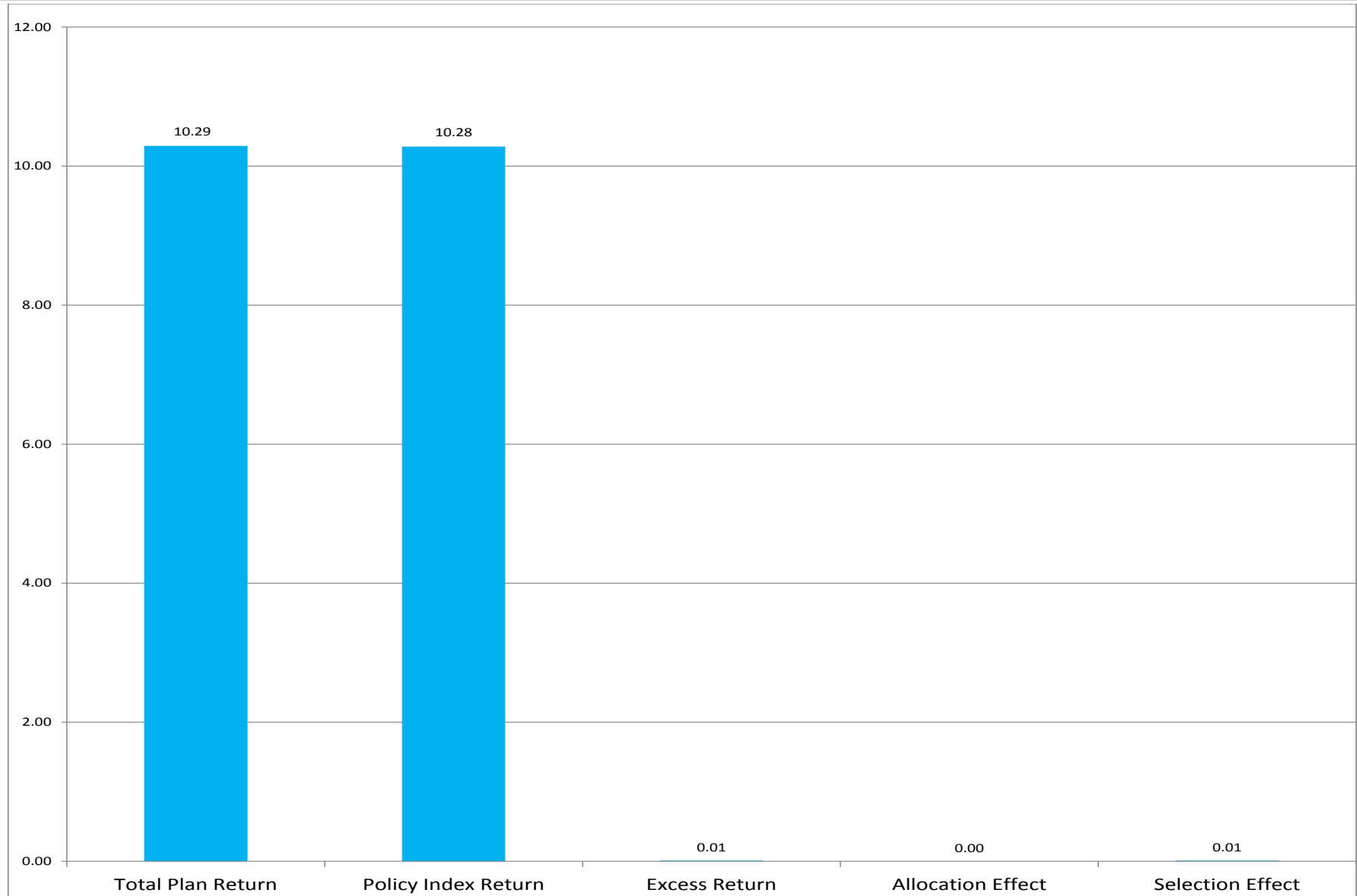
**Portfolio Asset Allocation – Inflation Protection**



Note: On September 28, 2018 NYCERS' combined Fixed Income and Cash portfolios have a duration of 5.4 years. The duration of the Barclays US Aggregate Index was 6 years on that date.





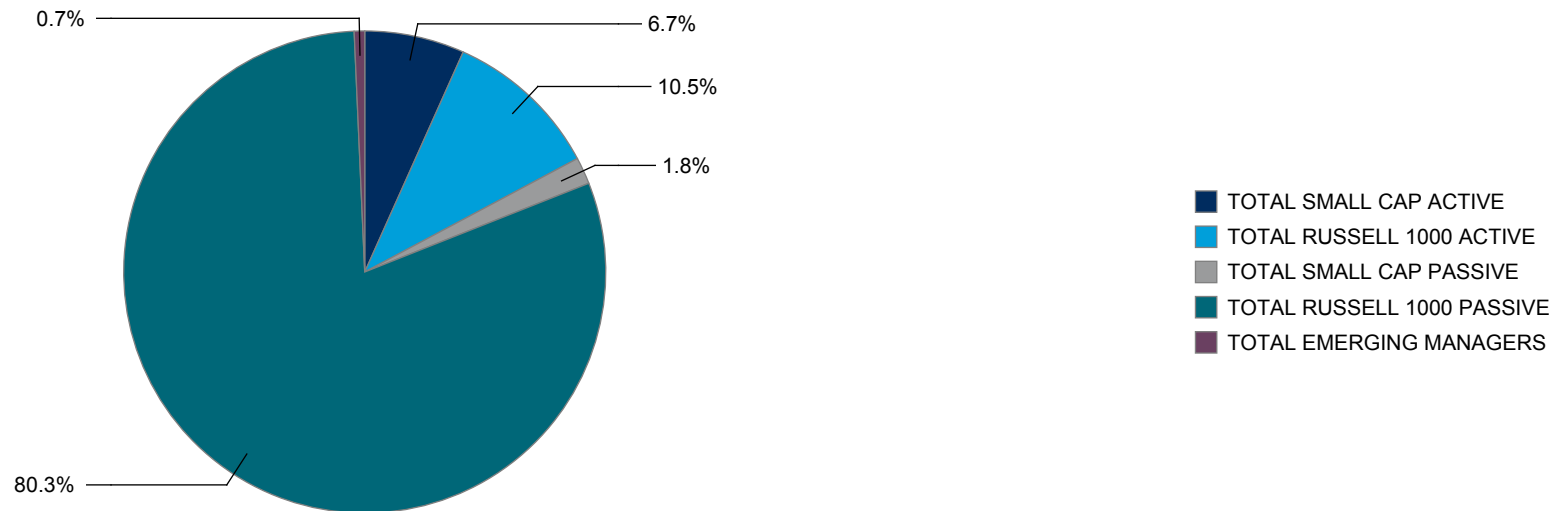


Allocation Effect - Asset Class Breakdown				
	Quarter	FYTD	3 Years	Benchmark
TOTAL EMPLOYEES'	-0.17	-0.17	0.00	Employees Policy Benchmark
TOTAL DOMESTIC EQUITY	-0.12	-0.12	-0.05	RUSSELL 3000
TOTAL DEVELOPED EQUITY	-0.01	-0.01	-0.03	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	-0.01	-0.01	0.00	MSCI World Index
TOTAL EMERGING MARKETS	-0.01	-0.01	-0.04	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	-0.01	HFRI Fund of Funds Composite Index plus 1%
TOTAL PRIVATE EQUITY	0.00	0.00	-0.01	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	0.00	0.00	-0.01	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE - NON CORE	0.00	0.00	0.00	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	0.00	0.00	0.00	CPI + 4%
TOTAL US TREASURY SHORT TERM	-0.23	-0.23	-0.16	FTSE USBIG Treasury 1-3 Y Index
TOTAL US TREASURY INTERMEDIATE	0.00	0.00	-0.02	FTSE USBIG Treasury/Agency 1-10 y
TOTAL ACTIVE GOVERNMENT	0.17	0.17	0.31	NYC - Treasury Agency Plus Five
TOTAL INVESTMENT GRADE CREDIT	0.02	0.02	-0.03	NYC - Investment Grade Credit
TOTAL MORTGAGES	0.03	0.03	0.04	FTSE MORTGAGE INDEX
TOTAL ETI	0.00	0.00	0.00	ETI Custom Benchmark
TOTAL CORE FI- DEVELOPING MGRS	-0.02	-0.02	-0.04	BBG BARC Agg
TOTAL CORE FI- EMERGING MGRS	-0.01	-0.01	-0.01	BBG BARC Agg
TOTAL HIGH YIELD	0.01	0.01	0.06	High Yield Custom Benchmark
TOTAL BANK LOANS	0.00	0.00	0.00	Credit Suisse Lev Loan Index
TOTAL TIPS MANAGERS	0.00	0.00	0.01	BBG BARC Gbl Inf-Lk: US TIPS (Dly)
TOTAL CONVERTIBLE BONDS	0.01	0.01	0.02	Merrill All US Converts
TOTAL OPPORTUNISTIC FIXED	0.00	0.00	0.00	OFI - JPMGHY / CSFB 50/50 Blend Plus 300
TOTAL CASH	-0.02	-0.02	-0.12	

Selection Effect - Asset Class Breakdown				
	Quarter	FYTD	3 Years	Benchmark
TOTAL EMPLOYEES'	-0.04	-0.04	0.01	Employees Policy Benchmark
TOTAL DOMESTIC EQUITY	-0.03	-0.03	-0.06	RUSSELL 3000
TOTAL DEVELOPED EQUITY	-0.01	-0.01	0.26	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	0.00	0.00	0.00	MSCI World Index
TOTAL EMERGING MARKETS	-0.03	-0.03	-0.05	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	-0.05	HFRI Fund of Funds Composite Index plus 1%
TOTAL PRIVATE EQUITY	0.05	0.05	-0.11	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	0.02	0.02	0.01	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE - NON CORE	-0.02	-0.02	0.03	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	0.01	0.01	0.02	CPI + 4%
TOTAL US TREASURY SHORT TERM	0.00	0.00	0.00	FTSE USBIG Treasury 1-3 Y Index
TOTAL US TREASURY INTERMEDIATE	0.00	0.00	0.01	FTSE USBIG Treasury/Agency 1-10 y
TOTAL ACTIVE GOVERNMENT	0.00	0.00	0.00	NYC - Treasury Agency Plus Five
TOTAL INVESTMENT GRADE CREDIT	0.00	0.00	0.01	NYC - Investment Grade Credit
TOTAL MORTGAGES	0.00	0.00	0.00	FTSE MORTGAGE INDEX
TOTAL ETI	0.01	0.01	0.00	ETI Custom Benchmark
TOTAL CORE FI- DEVELOPING MGRS	0.00	0.00	0.00	BBG BARC Agg
TOTAL CORE FI- EMERGING MGRS	0.00	0.00	0.00	BBG BARC Agg
TOTAL HIGH YIELD	-0.01	-0.01	-0.02	High Yield Custom Benchmark
TOTAL BANK LOANS	0.00	0.00	-0.01	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	-0.02	-0.02	-0.05	Merrill All US Converts
TOTAL OPPORTUNISTIC FIXED	-0.01	-0.01	-0.06	OFI - JPMGHY / CSFB 50/50 Blend Plus 300
TOTAL CASH	0.00	0.00	0.00	

# Total Domestic Equity Asset Allocations: Quarter Ending September 30, 2018

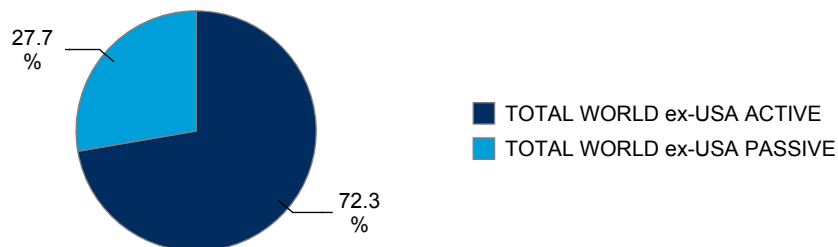
	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL DOMESTIC EQUITY	\$19.0	28.7



	<u>Policy Weight</u>	<u>Actual Weight</u>	<u>Under/Over Weight</u>	<u>Quarterly Returns</u>		
				<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL SMALL CAP ACTIVE	4.9	6.7	1.8	2.8	3.6	(0.8)
TOTAL RUSSELL 1000 ACTIVE	18.0	10.5	(7.5)	7.1	7.4	(0.3)
TOTAL SMALL CAP PASSIVE	2.2	1.8	(0.4)	5.0	3.6	1.5
TOTAL RUSSELL 1000 PASSIVE	74.3	80.3	6.0	7.4	7.4	0.0
TOTAL EMERGING MANAGERS	0.6	0.7	0.1	4.7	3.6	1.2



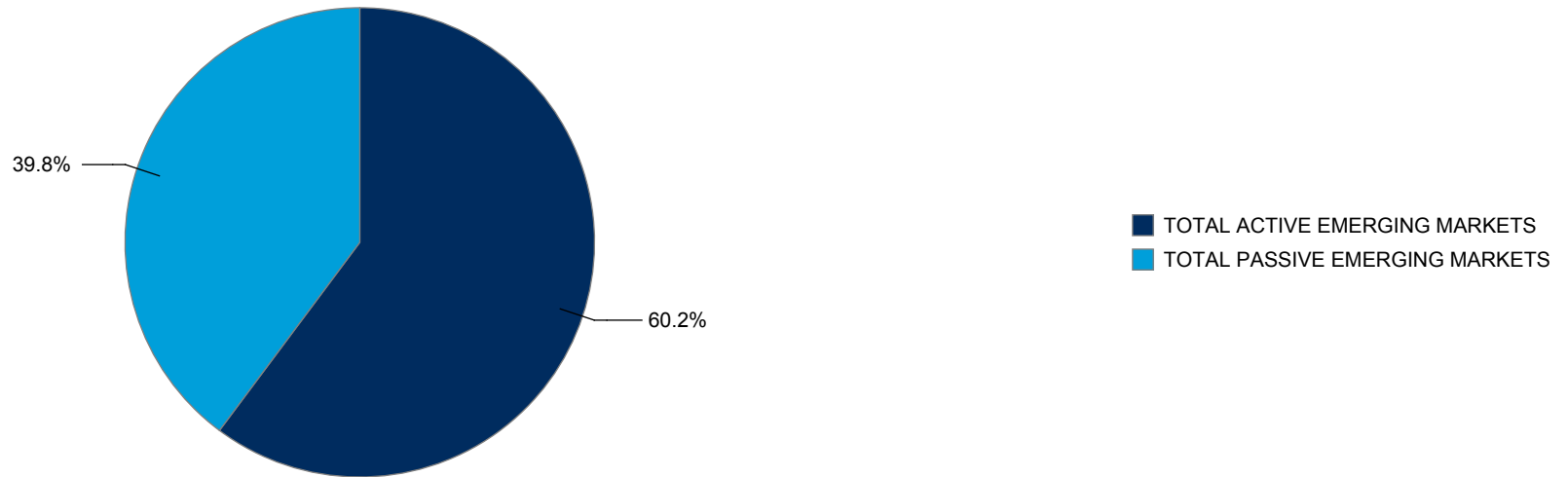
	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL WORLD ex-USA	\$8.2	12.3



	<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	63.84	1.29	1.31	(0.02)
TOTAL WORLD ex-USA SMALL CAP ACTIVE	8.44	(1.53)	(0.45)	(1.08)
TOTAL WORLD ex-USA LARGE & MID CAP PASSIVE	21.71	1.34	1.31	0.03
TOTAL WORLD ex-USA SMALL CAP PASSIVE	5.97	(0.81)	(0.85)	0.04
TOTAL WORLD ex-USA	100.00	0.91	0.98	(0.07)



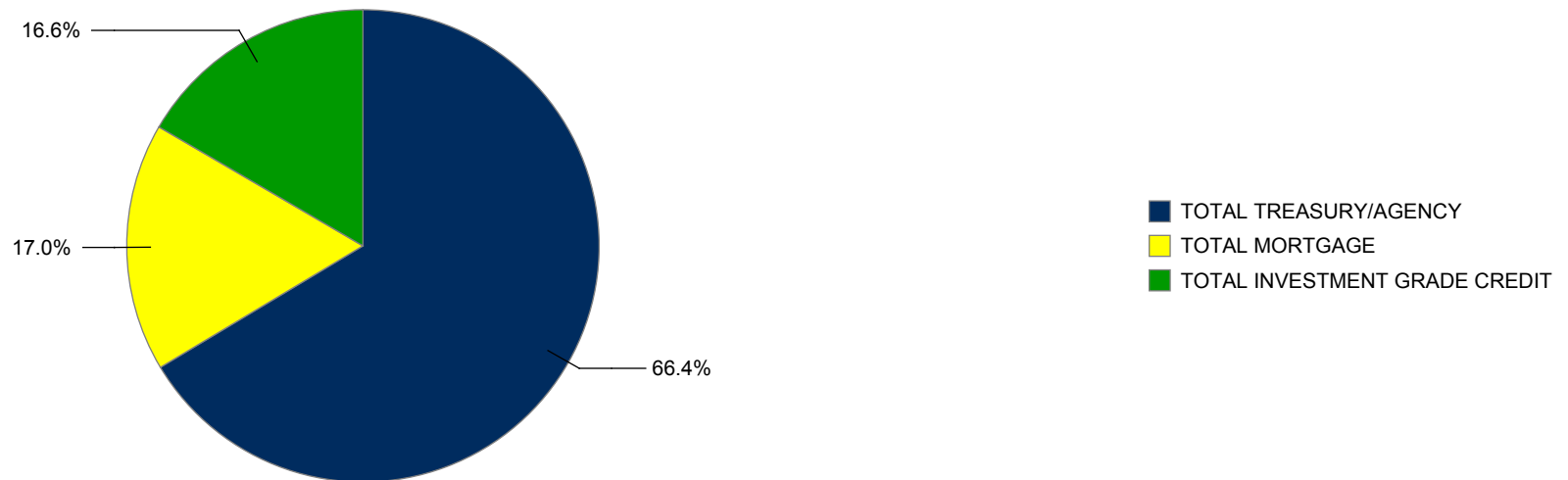
	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL EMERGING MARKETS	\$4.7	7.2



	<u>Asset Class Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL ACTIVE EMERGING MARKETS	60.25	1.21	1.82	(0.61)
TOTAL PASSIVE EMERGING MARKETS	39.75	1.82	1.82	0.00
TOTAL EMERGING MARKETS	100.00	1.45	1.82	(0.36)



	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL STRUCTURED + ETI	\$14.8	22.4



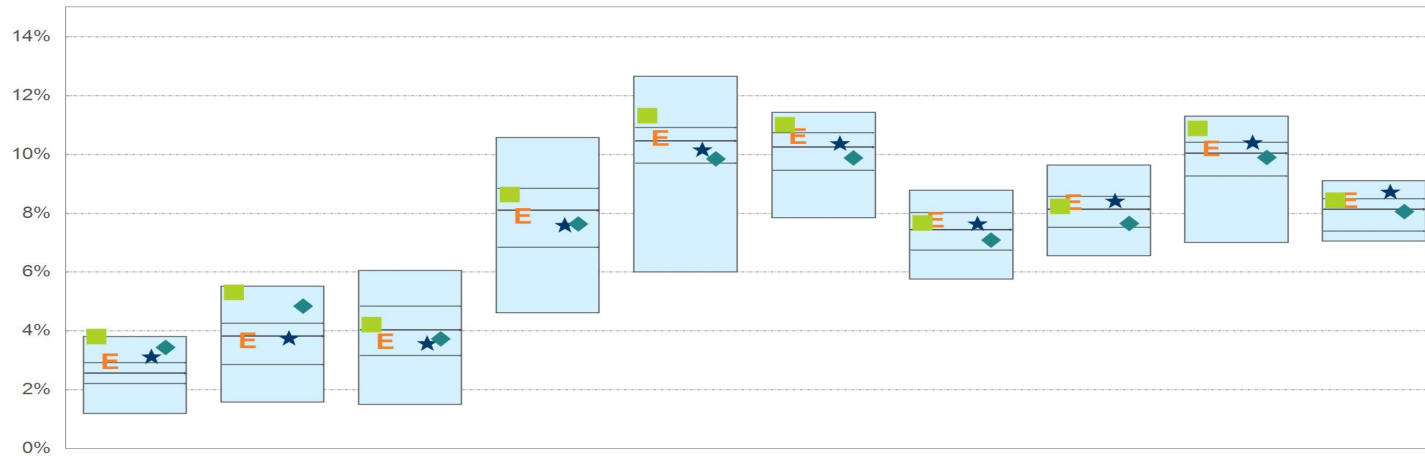
	<u>Policy Weight</u>	<u>Actual Weight</u>	<u>Under/Over Weight</u>	<u>Quarterly Returns</u>		
				<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL TREASURY/AGENCY	58.82	66.43	7.61	(0.59)	(1.51)	0.92
TOTAL MORTGAGE	20.59	16.96	(3.63)	0.09	(0.09)	0.17
TOTAL INVESTMENT GRADE CREDIT	20.59	16.61	(3.98)	0.99	0.87	0.11

Through September 30, 2018



### City of New York Performance Comparison

Total Returns of Master Trusts - Public : Plans > \$10 Billion  
 Cumulative Periods Ending : September 30, 2018



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	3.81	5.52	6.06	10.58	12.66	11.43	8.79	9.64	11.31	9.10
25th	2.92	4.26	4.84	8.85	10.91	10.73	8.02	8.57	10.42	8.50
50th	2.57	3.83	4.04	8.11	10.47	10.25	7.45	8.14	10.04	8.13
75th	2.22	2.86	3.16	6.84	9.70	9.46	6.75	7.53	9.26	7.40
95th	1.20	1.58	1.50	4.61	6.01	7.85	5.77	6.55	7.01	7.06
No. Of Obs	48	48	48	48	48	48	48	48	48	44
<b>E</b> Total System - Employee	2.87 (29)	3.59 (54)	3.56 (60)	7.82 (56)	10.47 (52)	10.53 (33)	7.69 (37)	8.29 (43)	10.11 (47)	8.34 (38)
<b>★</b> Employees Policy Bench	3.03 (21)	3.67 (52)	3.48 (60)	7.51 (62)	10.07 (68)	10.28 (45)	7.56 (45)	8.33 (39)	10.31 (33)	8.64 (12)
<b>■</b> Public Mkt Equiv 25	3.72 (5)	5.22 (11)	4.12 (45)	8.54 (33)	11.22 (19)	10.91 (11)	7.57 (45)	8.14 (50)	10.78 (17)	8.35 (36)
<b>◆</b> Public Mkt Equiv 35	3.35 (15)	4.74 (21)	3.63 (54)	7.54 (60)	9.76 (70)	9.79 (68)	6.99 (68)	7.56 (72)	9.80 (58)	7.96 (54)

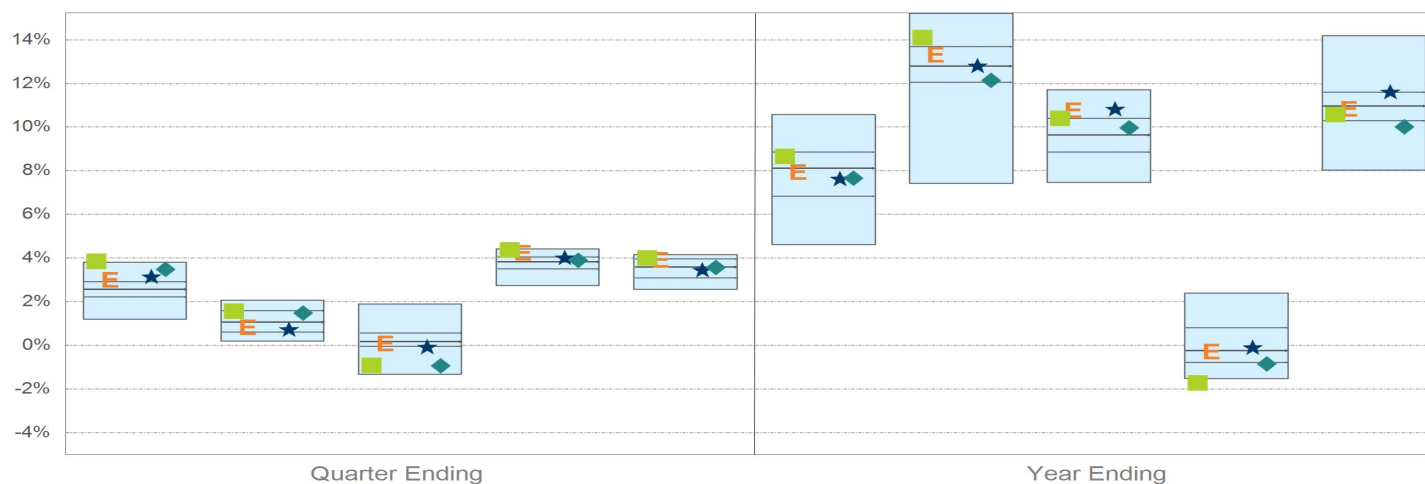
Wilshire Trust Universe Comparison Service® (TUCS®)

Through September 30, 2018



### City of New York Performance Comparison

Total Returns of Master Trusts - Public : Plans > \$10 Billion  
 Consecutive Time Periods: September 30, 2018



Percentile Rankings	Sep 18	Jun 18	Mar 18	Dec 17	Sep 17	Sep 18	Sep 17	Sep 16	Sep 15	Sep 14
5th	3.81	2.06	1.90	4.43	4.16	10.58	15.21	11.70	2.39	14.18
25th	2.92	1.59	0.58	4.04	3.96	8.85	13.68	10.41	0.80	11.59
50th	2.57	1.07	0.18	3.83	3.59	8.11	12.79	9.64	-0.23	10.96
75th	2.22	0.61	-0.05	3.50	3.10	6.84	12.05	8.85	-0.78	10.30
95th	1.20	0.20	-1.33	2.74	2.58	4.61	7.43	7.47	-1.52	8.03
No. Of Obs	48	48	48	48	48	48	48	48	48	48
<b>E</b> Total System - Employee	2.87 (29)	0.70 (70)	-0.03 (72)	4.11 (17)	3.78 (35)	7.82 (56)	13.19 (33)	10.65 (17)	-0.40 (62)	10.71 (58)
<b>★</b> Employees Policy Bench	3.03 (21)	0.62 (72)	-0.19 (83)	3.90 (45)	3.34 (68)	7.51 (62)	12.68 (62)	10.70 (13)	-0.21 (47)	11.50 (33)
<b>■</b> Public Mkt Equiv 25	3.72 (5)	1.45 (31)	-1.05 (94)	4.25 (9)	3.87 (33)	8.54 (33)	13.97 (19)	10.28 (29)	-1.84 (96)	10.44 (66)
<b>◆</b> Public Mkt Equiv 35	3.35 (15)	1.35 (33)	-1.06 (94)	3.77 (50)	3.45 (64)	7.54 (60)	12.02 (75)	9.84 (43)	-0.98 (81)	9.88 (79)

Wilshire Trust Universe Comparison Service® (TUCS®)

**NEW YORK CITY EMPLOYEE RETIREMENT SYSTEM  
 ACTUAL FEES FOR FISCAL YEAR ENDED JUNE 30, 2018 AND ESTIMATED FEES FOR FY 2019 UPDATED THROUGH SEPTEMBER 2018**

INVESTMENT STYLE (EQUITIES)	Actual 2018								Estimates 2019		
	Avg. MV FY 2018 (\$MM)	Mgmt. Fees (\$M)	Partnership Expenses (\$M)	Mgmt. Fees / Partnership Expenses in BPS	Incentive Fees in (\$M)	Incentive Fees in BPS	Total Fees & Expenses in (\$M)	Total Fees & Expenses in BPS	Avg. MV FYTD 09- 30-18 (\$MM)	Mgmt. Fees (\$M)	Mgmt. Fees in BPS
<b>Total US Equities</b>	<b>30,033.47</b>	<b>8,309.25</b>	-	<b>2.77</b>	-	-	<b>8,309.25</b>	<b>2.77</b>	<b>18,795.31</b>	<b>7,900.17</b>	<b>4.20</b>
Small Cap Active	1,273.56	4,687.14	-	36.80	-	-	4,687.14	36.80	1,288.14	4,708.39	36.55
Small Cap Growth	-	-	-	-	-	-	-	-	-	-	-
Small Cap Value	280.85	1,459.33	-	51.96	-	-	1,459.33	51.96	243.05	1,265.24	52.06
Small Cap Core	216.00	1,555.04	-	71.99	-	-	1,555.04	71.99	237.70	1,727.38	72.67
Small Cap Fundamental Index	776.70	1,672.77	-	21.54	-	-	1,672.77	21.54	807.39	1,715.77	21.25
Russell 1000 Fundamental	2,123.94	2,506.74	-	11.80	-	-	2,506.74	11.80	1,963.48	2,259.10	11.51
Active Emerging Managers (U.S. Equities)	117.16	545.79	-	46.59	-	-	545.79	46.59	123.79	617.75	49.90
<b>Total US Active Equities</b>	<b>3,514.65</b>	<b>7,739.67</b>	-	<b>22.02</b>	-	-	<b>7,739.67</b>	<b>22.02</b>	<b>3,375.41</b>	<b>7,585.24</b>	<b>22.47</b>
Small Cap Passive											
Small Cap Passive	352.91	15.04	-	0.43	-	-	15.04	0.43	350.57	14.81	0.42
Mid Cap Passive											
Mid Cap Passive	644.90	40.01	-	0.62	-	-	40.01	0.62	-	-	-
Russell / S&P Passive											
Russell 1000 Growth Passive	2,499.23	112.60	-	0.45	-	-	112.60	0.45	3.73	-	-
Russell 1000 Value Passive	2,378.71	106.86	-	0.45	-	-	106.86	0.45	3.88	-	-
Russell 1000 Core Passive	14,827.59	72.62	-	0.05	-	-	72.62	0.05	15,061.72	300.12	0.20
Passive Russell 3000	1,485.03	97.57	-	0.66	-	-	97.57	0.66	-	-	-
Passive S&P 500	4,330.43	124.88	-	0.29	-	-	124.88	0.29	-	-	-
Passive Russell Top 200	-	-	-	-	-	-	-	-	-	-	-
<b>Total US Passive Equities</b>	<b>26,518.81</b>	<b>569.57</b>	-	<b>0.21</b>	-	-	<b>569.57</b>	<b>0.21</b>	<b>15,419.90</b>	<b>314.93</b>	<b>0.20</b>

**NEW YORK CITY EMPLOYEE RETIREMENT SYSTEM  
 ACTUAL FEES FOR FISCAL YEAR ENDED JUNE 30, 2018 AND ESTIMATED FEES FOR FY 2019 UPDATED THROUGH SEPTEMBER 2018**

	Actual 2018							Estimates 2019			
	Avg. MV FY 2018 (\$MM)	Mgmt. Fees (\$M)	Partnership Expenses (\$M)	Mgmt. Fees / Partnership Expenses in BPS	Incentive Fees in (\$M)	Incentive Fees in BPS	Total Fees & Expenses in (\$M)	Total Fees & Expenses in BPS	Avg. MV FYTD 09- 30-18 (\$MM)	Mgmt. Fees (\$M)	Mgmt. Fees in BPS
<b>Total International Equities</b>	<b>14,046.83</b>	<b>35,549.61</b>	-	<b>25.31</b>	<b>5,341.81</b>	<b>3.80</b>	<b>40,891.42</b>	<b>29.11</b>	<b>13,456.49</b>	<b>32,646.22</b>	<b>24.26</b>
Global Equity	-	-	-	-	-	-	-	-	253.56	915.53	36.11
<b>Total Global Equities</b>	-	-	-	-	-	-	-	-	<b>253.56</b>	<b>915.53</b>	<b>36.11</b>
<b>Active Total World Ex Usa</b>	<b>5,966.90</b>	<b>18,186.74</b>	-	<b>30.48</b>	-	-	<b>18,186.74</b>	<b>30.48</b>	<b>5,950.71</b>	<b>17,857.13</b>	<b>30.01</b>
World Ex-USA Large & Mid Active	5,139.41	14,319.43	-	27.86	-	-	14,319.43	27.86	5,240.18	14,610.34	27.88
World Ex-USA Small Cap Active	826.95	3,867.31	-	46.77	-	-	3,867.31	46.77	710.11	3,246.79	45.72
Total World Ex USA	0.47	-	-	-	-	-	-	-	0.42	-	-
Total Progress Intl.	0.07	-	-	-	-	-	-	-	0.00	-	-
NON-U.S. Environmental Managers	110.13	1,418.00	-	128.75	5,341.81	485.04	6,759.81	613.79	2.74	-	-
Active Emerging Markets	3,067.42	12,872.07	-	41.96	-	-	12,872.07	41.96	2,902.02	11,625.28	40.06
Total Active Int'l Fund of Funds	377.58	1,799.24	-	47.65	-	-	1,799.24	47.65	424.37	2,188.15	51.56
<b>Total Active International Equities</b>	<b>9,522.04</b>	<b>34,276.05</b>	-	<b>36.00</b>	<b>5,341.81</b>	<b>485.04</b>	<b>39,617.86</b>	<b>41.61</b>	<b>9,279.84</b>	<b>31,670.57</b>	<b>34.13</b>
Int'l Passive Equities											
World Ex-USA Small Cap Passive	487.75	242.39	-	4.97	-	-	242.39	4.97	491.73	246.22	5.01
World Ex-USA Large & Mid Cap Passive	2,009.07	233.79	-	1.16	-	-	233.79	1.16	1,777.63	208.10	1.17
Passive Global	0.01	-	-	-	-	-	-	-	-	-	-
Passive Emerging Markets	2,027.97	797.37	-	3.93	-	-	797.37	3.93	1,907.29	521.34	2.73
Total Int'l Passive Equities	4,524.79	1,273.56	-	2.81	-	-	1,273.56	2.81	4,176.65	975.65	2.34
<b>REITS Active Equities</b>	-	-	-	-	-	-	-	-	-	-	-

**NEW YORK CITY EMPLOYEE RETIREMENT SYSTEM  
 ACTUAL FEES FOR FISCAL YEAR ENDED JUNE 30, 2018 AND ESTIMATED FEES FOR FY 2019 UPDATED THROUGH SEPTEMBER 2018**

	Actual 2018						Total Fees & Expenses in BPS		Estimates 2019		
	Avg. MV FY 2018 (\$MM)	Mgmt. Fees (\$M)	Partnership Expenses (\$M)	Mgmt. Fees / Partnership Expenses in BPS	Incentive Fees in (\$M)	Incentive Fees in BPS	Total Fees & Expenses in (\$M)	Total Fees & Expenses in BPS	Avg. MV FYTD 09- 30-18 (\$MM)	Mgmt. Fees (\$M)	Mgmt. Fees in BPS
<b>INVESTMENT STYLE (FIXED INCOME)</b>											
<b>Total Fixed Income</b>	<b>20,412.26</b>	<b>24,253.41</b>	-	<b>11.88</b>	<b>126.76</b>	<b>0.06</b>	<b>24,380.17</b>	<b>11.94</b>	<b>23,122.35</b>	<b>23,559.00</b>	<b>10.19</b>
Structured Program	11,622.74	6,125.43	-	5.27	126.76	0.11	6,252.19	5.38	14,061.62	5,926.76	4.21
Government Treas/Agency Sector	6,715.74	2,058.27	-	3.06	-	-	2,058.27	3.06	9,888.22	2,463.83	2.49
Long Duration Treasury	-	-	-	-	-	-	-	-	-	-	-
Mortgage Sector	1,711.97	1,022.75	-	5.97	126.76	0.74	1,149.51	6.71	1,709.07	1,005.48	5.88
Investment Grade Credit Sector	3,195.02	3,044.42	-	9.53	-	-	3,044.42	9.53	2,464.34	2,457.45	9.97
Developing Managers	402.45	713.19	-	17.72	-	-	713.19	17.72	400.79	716.69	17.88
Emerging Managers	118.55	406.02	-	34.25	-	-	406.02	34.25	118.29	409.06	34.58
TIPS	2,586.90	447.01	-	1.73	-	-	447.01	1.73	2,848.06	499.71	1.75
Active TIPS Managers	634.96	350.42	-	5.52	-	-	350.42	5.52	700.35	391.27	5.59
Passive TIPS Managers	1,951.94	96.60	-	0.49	-	-	96.60	0.49	2,147.71	108.43	0.50
High Yield	2,599.59	8,580.36	-	33.01	-	-	8,580.36	33.01	2,641.92	7,734.46	29.28
Bank Loans	1,120.32	3,619.93	-	32.31	-	-	3,619.93	32.31	1,154.29	3,720.37	32.23
Convertible Bonds	718.82	2,849.12	-	39.64	-	-	2,849.12	39.64	757.61	3,024.85	39.93
ETI - Access - RBC	149.14	276.85	-	18.56	-	-	276.85	18.56	158.12	291.61	18.44
ETI - AFL-CIO HIT	305.91	1,235.49	-	40.39	-	-	1,235.49	40.39	303.59	1,235.49	40.70
<b>Total Public Markets (Externally managed)</b>	<b>63,704.69</b>	<b>68,112.27</b>	-	<b>10.69</b>	<b>5,468.57</b>	<b>0.86</b>	<b>73,580.83</b>	<b>11.55</b>	<b>54,949.65</b>	<b>65,020.91</b>	<b>11.83</b>
Other ETI Programs	360.42	-	-	-	-	-	-	-	352.52	-	-
In-House Short Term	427.45	-	-	-	-	-	-	-	325.53	-	-
<b>Total Public Markets</b>	<b>64,492.56</b>	<b>68,112.27</b>	-	<b>10.56</b>	<b>5,468.57</b>	<b>0.85</b>	<b>73,580.83</b>	<b>11.41</b>	<b>55,627.70</b>	<b>65,020.91</b>	<b>11.69</b>



**NEW YORK CITY EMPLOYEE RETIREMENT SYSTEM  
 ACTUAL FEES FOR FISCAL YEAR ENDED JUNE 30, 2018 AND ESTIMATED FEES FOR FY 2019 UPDATED THROUGH SEPTEMBER 2018**

	Actual 2018								Estimates 2019		
	Avg. MV FY 2018 (\$MM)	Mgmt. Fees (\$M)	Partnership Expenses (\$M)	Mgmt. Fees / Partnership Expenses in BPS	Incentive Fees in (\$M)	Incentive Fees in BPS	Total Fees & Expenses in (\$M)	Total Fees & Expenses in BPS	Avg. MV FYTD 09- 30-18 (\$MM)	Mgmt. Fees (\$M)	Mgmt. Fees in BPS
<b>INVESTMENT STYLE (PRIVATE MARKETS)</b>											
Hedge Funds	75.56	550.03	-	72.80	-	-	550.03	72.80	-	-	-
Private Equity	4,432.07	51,023.76	17,512.47	154.64	88,032.63	198.63	156,568.87	353.26	4,566.97	89,210.17	195.34
Private Real Estate	3,349.27	33,103.03	8,497.60	124.21	31,661.63	94.53	73,262.26	218.74	3,439.18	39,177.48	113.92
Infrastructure	328.07	8,432.70	3,097.96	128.69	863.09	26.31	12,393.75	138.32	450.97	11,514.04	116.59
Opportunistic Fixed Income	1,762.93	15,577.66	10,614.53	148.57	3,481.59	19.75	29,673.78	168.32	1,852.23	15,722.56	84.88
<b>Total Private Markets</b>	<b>9,947.90</b>	<b>108,687.18</b>	<b>39,722.55</b>	<b>149.19</b>	<b>124,038.95</b>	<b>124.69</b>	<b>272,448.69</b>	<b>273.88</b>	<b>10,309.34</b>	<b>155,624.26</b>	<b>150.95</b>
<b>Total Overall</b>	<b>62,699.73</b>	<b>176,799.45</b>	<b>39,722.55</b>	<b>34.53</b>	<b>129,507.52</b>	<b>20.66</b>	<b>346,029.52</b>	<b>55.19</b>	<b>65,937.03</b>	<b>220,645.17</b>	<b>33.46</b>

The overall carried interest and incentive fees paid by NYCERS in Fiscal Year 2018: 20.66 BPS

**General Footnotes:**

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

Through September 30, 2018

**NYC EMPLOYEES' RETIREMENT SYSTEM  
 SECURITIES LENDING INCOME  
 September 30, 2018**

	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 (9 months)	10,993,084	9,426,243	5,189,354	25,608,681
Since Inception	<u>174,065,084</u>	<u>278,478,243</u>	<u>93,988,354</u>	<u>546,531,681</u>



---

**New York City  
Employees' Retirement System**

# **Appendix A**

## **Consolidated Performance Report**

# Consolidated Performance Report

Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
<b>SYSTEM RETURN SUMMARY</b>																
5	NYCERS-TOTAL PORTFOLIO - GROSS	66,277	100.00	2.87	2.87	3.56	16.51	9.57	(0.17)	7.34	15.73	10.53	8.29	8.34	8.78	07/01/1987
	ESTIMATED INVESTMENT FEES			(0.05)	(0.05)	(0.15)	(0.26)	(0.24)	(0.27)	(0.27)		(0.24)				
	EST MANAGEMENT FEES - PUBLIC MARKET (ACCRUAL)			(0.02)	(0.02)	(0.07)	(0.11)	(0.12)	(0.12)	(0.13)		(0.11)				
	EST MANAGEMENT FEES - ALTERNATIVE MARKETS (CASH)			(0.03)	(0.03)	(0.08)	(0.15)	(0.12)	(0.15)	(0.14)		(0.13)				
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	NYCERS-TOTAL PORTFOLIO - NET MGR			2.82	2.82	3.42	16.25	9.33	(0.44)	7.07		10.29				
	NYCERS POLICY BENCHMARK			3.03	3.03	3.48	15.98	9.43	0.17	8.15	15.33	10.28	8.33	8.64		
	EXCESS RETURN			(0.21)	(0.21)	(0.06)	0.27	(0.09)	(0.62)	(1.09)	0.40	0.01	(0.05)	(0.31)		
<b>EQUITY RETURN DETAIL</b>																
18	NYCERS-TOTAL EQUITY (INCL PE & RA) - GROSS	41,181	62.13	4.41	4.41	5.63	22.77	11.39	(0.17)	7.85	22.95	14.40	10.70	9.50	8.16	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.07)	(0.07)	(0.18)	(0.34)	(0.29)	(0.35)	(0.33)		(0.30)				
	EST MANAGEMENT FEES			(0.07)	(0.07)	(0.18)	(0.34)	(0.29)	(0.35)	(0.33)						
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	NYCERS-TOTAL EQUITY (INCL PE & RA) - NET MGR			4.35	4.35	5.45	22.43	11.10	(0.52)	7.52		14.10				
26	NYCERS-TOTAL DOMESTIC EQUITY - GROSS	19,015	28.69	7.02	7.02	10.30	20.07	14.34	(0.67)	11.35	34.39	16.92	13.01	11.83	11.47	08/01/1979
	ESTIMATED INVESTMENT FEES			(0.01)	(0.01)	(0.03)	(0.06)	(0.10)	(0.09)	(0.11)		(0.07)				
	NYCERS-TOTAL DOMESTIC EQUITY - NET MGR			7.01	7.01	10.26	20.01	14.24	(0.76)	11.24		16.85				
	RUSSELL 3000 (DAILY)			7.12	7.12	10.57	21.13	12.74	0.48	12.56	33.55	17.07	13.46	12.01	11.80	
	EXCESS RETURN			(0.11)	(0.11)	(0.31)	(1.12)	1.51	(1.24)	(1.31)	0.84	(0.23)	(0.45)	(0.18)	(0.34)	
36	NYCERS-TOTAL SMALL CAP - GROSS	1,631	2.46	3.32	3.32	10.18	12.91	25.30	(5.96)	4.40	41.99	16.95	10.92	12.33	9.27	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.07)	(0.07)	(0.24)	(0.33)	(0.32)	(0.27)	(0.31)		(0.33)				
	NYCERS-TOTAL SMALL CAP - NET MGR			3.25	3.25	9.94	12.58	24.97	(6.24)	4.09		16.62				
	RUSSELL 2000 (DAILY)			3.58	3.58	11.51	14.65	21.31	(4.41)	4.89	38.82	17.12	11.07	11.11	9.00	
	EXCESS RETURN			(0.33)	(0.33)	(1.58)	(2.07)	3.67	(1.82)	(0.80)	3.17	(0.50)	(0.15)	1.21	0.27	
46	NYCERS-TOTAL RUSSELL 1000 - GROSS	17,260	26.04	7.40	7.40										11.39	04/01/2018
	ESTIMATED INVESTMENT FEES			(0.00)	(0.00)										(0.01)	
	NYCERS-TOTAL RUSSELL 1000 - NET MGR			7.40	7.40										11.38	
	RUSSELL 1000 (DAILY)			7.42	7.42										11.25	
	EXCESS RETURN			(0.03)	(0.03)										0.13	

# Consolidated Performance Report

Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date
56 NYCERS-TOTAL FUND OF FUNDS - GROSS	124	0.19	4.88	4.88	12.56									14.82	05/01/2017
ESTIMATED INVESTMENT FEES			(0.13)	(0.13)	(0.42)									(0.52)	
NYCERS-TOTAL FUND OF FUNDS - NET MGR			4.75	4.75	12.13									14.30	
RUSSELL 2000 (DAILY)			3.58	3.58	11.51									15.98	
EXCESS RETURN			1.17	1.17	0.62									(1.68)	

# Consolidated Performance Report

Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
<b>EQUITY RETURN DETAIL</b>																
68	NYCERS-TOTAL WORLD ex-USA - GROSS	8,180	12.34	0.97	0.97	0.03	29.77	4.50	(0.82)	(4.09)	22.56	12.54	6.43	6.61	6.47	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.06)	(0.06)	(0.17)	(0.32)	(0.28)	(0.28)	(0.27)		(0.28)				
	NYCERS-TOTAL WORLD ex-USA - NET MGR			0.91	0.91	(0.13)	29.45	4.22	(1.09)	(4.36)		12.26				
	WORLD EX USA CUSTOM BM			0.98	0.98	(1.62)	26.40	1.15	0.49	(4.90)	23.54	9.71	4.91	5.91	5.91	
	EXCESS RETURN			(0.07)	(0.07)	1.48	3.05	3.06	(1.59)	0.54	(0.97)	2.54	1.52	0.70	0.55	
78	NYCERS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - GROSS	5,222	7.88	1.36	1.36	1.16	31.04	5.17	(3.97)	(4.44)		13.33			5.64	11/01/2013
	ESTIMATED INVESTMENT FEES			(0.07)	(0.07)	(0.21)	(0.36)	(0.30)	(0.27)	(0.27)		(0.32)			(0.30)	
	NYCERS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - NET MGR			1.29	1.29	0.95	30.68	4.88	(4.24)	(4.71)		13.02			5.34	
	NYC CUSTOM WORLD EX-USA LG & MID ACT INDEX			1.31	1.31	(1.50)	25.18	1.00	(0.81)	(4.90)		9.25			3.80	
	EXCESS RETURN			(0.02)	(0.02)	2.45	5.49	3.88	(3.43)	0.20		3.77			1.54	
88	NYCERS-TOTAL WORLD ex-USA SMALL CAP ACTIVE- GROSS	690	1.04	(1.42)	(1.42)	(2.99)	34.86	2.67	10.72	(3.78)		12.74	9.00		9.76	05/01/2013
	ESTIMATED INVESTMENT FEES			(0.11)	(0.11)	(0.33)	(0.62)	(0.50)	(0.55)	(0.48)		(0.53)				
	NYCERS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - NET MGR			(1.53)	(1.53)	(3.32)	34.24	2.17	10.18	(4.26)		12.21				
	S&P EPAC SMALL CAP USD NET			(0.45)	(0.45)	(2.58)	33.47	1.34	8.58	(3.43)		11.72	7.91		8.89	
	EXCESS RETURN			(1.08)	(1.08)	(0.74)	0.78	0.83	1.59	(0.83)		0.49	1.09		0.86	
98	NYCERS-TOTAL WORLD ex-USA LARGE CAP PASSIVE - GROSS	1,776	2.68	1.34	1.34	(1.10)	24.54	1.30	(0.41)	(4.98)	23.02	9.31	4.54		5.18	02/01/2011
	ESTIMATED INVESTMENT FEES			(0.00)	(0.00)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)		(0.02)				
	NYCERS-TOTAL WORLD ex-USA LARGE CAP PASSIVE - NET MGR			1.34	1.34	(1.12)	24.53	1.28	(0.42)	(5.00)		9.29				
	NYC CUSTOM WORLD EX US INDEX			1.31	1.31	(1.50)	24.12	1.00	(0.81)	(4.90)	22.78	8.94	4.25		4.87	
	EXCESS RETURN			0.03	0.03	0.38	0.41	0.28	0.39	(0.10)	0.24	0.35	0.29		0.31	
108	NYCERS-TOTAL WORLD ex-USA SMALL CAP PASSIVE - GROSS	488	0.74	(0.80)	(0.80)	(1.98)	33.74	2.53	9.99			12.78			8.07	02/01/2014
	ESTIMATED INVESTMENT FEES			(0.01)	(0.01)	(0.04)	(0.08)	(0.02)	(0.02)			(0.04)			(0.03)	
	NYCERS-TOTAL WORLD ex-USA SMALL CAP PASSIVE - NET MGR			(0.81)	(0.81)	(2.02)	33.66	2.52	9.97			12.74			8.03	
	WORLD EX USA SC PASSIVE CUSTOM BM			(0.85)	(0.85)	(2.28)	33.31	2.18	9.59			12.44			7.62	
	EXCESS RETURN			0.04	0.04	0.26	0.35	0.33	0.39			0.30			0.41	

# Consolidated Performance Report

Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
<b>EQUITY RETURN DETAIL</b>																
120	NYCERS-TOTAL ACTIVE EMERGING MARKETS - GROSS	2,859	4.31	1.31	1.31	(9.05)	36.08	12.59	(17.85)	1.02	(0.20)	11.27	3.67	6.45	7.64	11/01/2005
	ESTIMATED INVESTMENT FEES			(0.10)	(0.10)	(0.27)	(0.60)	(0.52)	(0.41)	(0.50)		(0.49)				
	NYCERS-TOTAL ACTIVE EMERGING MARKETS - NET MGR			1.21	1.21	(9.32)	35.48	12.07	(18.25)	0.52		10.78				
	NYCERS CUSTOM EM INDEX			1.82	1.82	(8.08)	34.18	13.66	(16.80)	(0.07)	(4.22)	11.65	3.40	5.64	7.03	
	EXCESS RETURN			(0.61)	(0.61)	(1.24)	1.30	(1.59)	(1.45)	0.60	4.03	(0.87)	0.27	0.80	0.61	
130	NYCERS-TOTAL PASSIVE EMERGING MARKETS - GROSS	1,886	2.85	1.83	1.83	(7.37)	32.97	12.55	(17.87)	(1.29)	(4.24)	11.16	2.69		0.13	04/01/2011
	ESTIMATED INVESTMENT FEES			(0.01)	(0.01)	(0.03)	(0.07)	(0.06)	(0.05)	(0.06)		(0.06)				
	NYCERS-TOTAL PASSIVE EMERGING MARKETS - NET MGR			1.82	1.82	(7.41)	32.90	12.49	(17.92)	(1.35)		11.10				
	MSCI CUSTOM NYCERS EMERGING MARKETS (NET)			1.82	1.82	(7.64)	33.03	12.68	(17.71)			11.19				
	EXCESS RETURN			0.00	0.00	0.23	(0.13)	(0.19)	(0.21)			(0.09)				
140	NYCERS-TOTAL INTERNATIONAL FUND OF FUNDS - GROSS	436	0.66	0.78	0.78	(1.49)								9.00	05/01/2017	
	ESTIMATED INVESTMENT FEES			(0.13)	(0.13)	(0.38)								(0.56)		
	NYCERS-TOTAL INTERNATIONAL FUND OF FUNDS - NET MGR			0.65	0.65	(1.88)								8.44		
	NYC BLENDED CUSTOM BENCHMARK FOR FOF (ERS)			1.11	1.11	(2.52)								8.21		
	EXCESS RETURN			(0.46)	(0.46)	0.64								0.23		
150	NYCERS-TOTAL GLOBAL EQUITY - GROSS	256	0.39											3.16	08/01/2018	
	ESTIMATED INVESTMENT FEES													(0.08)		
	NYCERS-TOTAL GLOBAL EQUITY - NET MGR													3.08		
	MSCI WORLD INDEX													1.80		
	EXCESS RETURN													1.28		

# Consolidated Performance Report

Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date
<b>EQUITY RETURN DETAIL</b>															
168	NYCERS-TOTAL HEDGE FUND* - NET MGR	38	0.06	(0.27)	(0.27)	4.30	3.97	2.24	(1.88)	5.56	4.96	3.02	3.44	3.23	07/01/2011
	HFRI FUND OF FUNDS COMPOSITE INDEX + 1%			0.45	0.45	1.69	8.84	1.52	0.73	4.40	10.04	4.30	4.19	3.77	
	<b>EXCESS RETURN</b>			(0.72)	(0.72)	2.61	(4.87)	0.72	(2.61)	1.16	(5.08)	(1.28)	(0.75)	(0.54)	
178	NYCERS-TOTAL DIRECT HEDGE FUNDS* - NET MGR	38	0.06	(0.27)	(0.27)	4.30	4.30	2.79	(1.56)	6.02	4.24	3.31	3.78	4.33	01/01/2012
	HFRI FUND OF FUNDS COMPOSITE INDEX + 1%			0.45	0.45	1.69	8.84	1.52	0.73	4.40	10.04	4.30	4.19	4.84	
	<b>EXCESS RETURN</b>			(0.72)	(0.72)	2.61	(4.54)	1.27	(2.29)	1.62	(5.80)	(0.99)	(0.42)	(0.51)	
188	NYCERS-TOTAL PERMAL HEDGE FUNDS* - NET MGR														
	HFRI FUND OF FUNDS COMPOSITE INDEX + 1%														
	<b>EXCESS RETURN</b>														

\* INFORMATION PROVIDED BY ALPHA FRONTIER



# Consolidated Performance Report

Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
<b>EQUITY RETURN DETAIL</b>																
197	NYCERS-TOTAL PRIVATE EQUITY (TIME WEIGHTED)	4,605	6.95	5.62	5.62	12.81	19.65	10.84	10.61	13.99	8.08	14.46	13.87	10.36	12.57	04/01/2004
	NYC R3000 +3% LAGGED			4.65	4.65	12.20	22.22	18.37	2.49	21.24	24.53	14.90	16.66	14.36	13.21	
	EXCESS RETURN			0.97	0.97	0.61	(2.57)	(7.53)	8.11	(7.26)	(16.45)	(0.45)	(2.79)	(4.00)	(0.64)	
207	NYCERS-TOTAL PRIVATE REAL ESTATE (TIME WEIGHTED)	3,440	5.19	2.12	2.12	8.00	11.58	10.84	16.06	15.44	12.61	11.33	12.62	4.96	9.48	04/01/2004
	NCREIF NFI-ODCE NET + 100 BP			2.12	2.12	6.54	7.72	8.86	15.08	12.56	14.02	8.90	10.80			
	EXCESS RETURN			0.00	0.00	1.46	3.85	1.98	0.98	2.88	(1.41)	2.43	1.82			
217	NYCERS-TOTAL INFRASTRUCTURE (TIME WEIGHTED)	464	0.70	3.14	3.14	11.27	19.07	9.87	15.14	20.16		14.55			15.59	12/01/2013
	CPI + 4%			1.44	1.44	4.68	6.20	6.17	4.69	4.69		6.08			5.60	
	EXCESS RETURN			1.70	1.70	6.59	12.88	3.70	10.45	15.47		8.47			9.99	

# Consolidated Performance Report

Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
<b>FIXED INCOME RETURN DETAIL</b>																
229	NYCERS-TOTAL FIXED INCOME (DOM & GLOBAL) - GROSS	25,096	37.87	0.40	0.40	(0.21)	4.93	6.00	(0.37)	6.18	1.19	3.28	3.45	5.70	8.15	02/01/1980
	ESTIMATED INVESTMENT FEES			(0.03)	(0.03)	(0.08)	(0.13)	(0.14)	(0.13)	(0.15)		(0.13)				
	EST MANAGEMENT FEES			(0.03)	(0.03)	(0.08)	(0.13)	(0.14)	(0.13)	(0.15)						
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	NYCERS-TOTAL FIXED INCOME (DOM & GLOBAL) - NET MGR			0.37	0.37	(0.30)	4.80	5.86	(0.50)	6.03		3.15				
237	NYCERS-TOTAL STRUCTURED FIXED INCOME - GROSS	14,022	21.16	(0.23)	(0.23)	(2.17)	4.39	3.87	0.28	7.69	(1.73)	1.83	2.80	5.04	7.53	01/01/1985
	ESTIMATED INVESTMENT FEES			(0.01)	(0.01)	(0.03)	(0.06)	(0.07)	(0.09)			(0.06)				
	NYCERS-TOTAL STRUCTURED FIXED INCOME - NET MGR			(0.24)	(0.24)	(2.21)	4.33	3.79	0.21	7.60		1.77				
	NYC - CORE PLUS FIVE			0.02	0.02	(2.06)	4.51	3.20	0.41	7.66	(2.79)	1.67	2.65	4.44		
	EXCESS RETURN			(0.26)	(0.26)	(0.14)	(0.17)	0.60	(0.20)	(0.06)	1.06	0.10	0.15	0.60		
247	NYCERS-TOTAL CORE FI- DEVELOPING MGRS - GROSS	401	0.60	0.56	0.56	(1.30)	4.16	3.80	1.04	5.84	(1.54)	2.14	2.69		4.44	05/01/2009
	ESTIMATED INVESTMENT FEES			(0.04)	(0.04)	(0.13)	(0.18)	(0.19)	(0.18)	(0.17)		(0.18)				
	NYCERS-TOTAL CORE FI- DEVELOPING MGRS - NET MGR			0.52	0.52	(1.43)	3.98	3.61	0.86	5.67		1.96				
	BBG BARC AGG (DLY)			0.02	0.02	(1.60)	3.54	2.65	0.55	5.97	(2.02)	1.31	2.16		3.45	
	EXCESS RETURN			0.50	0.50	0.17	0.44	0.96	0.31	(0.30)	0.49	0.65	0.53		0.99	
257	NYCERS-TOTAL CORE FI- EMERGING MGRS - GROSS	118	0.18	0.15	0.15	(1.15)	4.66	2.87	0.90	6.18	(1.76)	1.99	2.66	4.59	5.67	01/01/1992
	ESTIMATED INVESTMENT FEES			(0.09)	(0.09)	(0.25)	(0.41)	(0.30)	(0.35)	(0.36)		(0.35)				
	NYCERS-TOTAL CORE FI- EMERGING MGRS - NET MGR			0.06	0.06	(1.40)	4.25	2.58	0.56	5.82		1.65				
	BBG BARC AGG (DLY)			0.02	0.02	(1.60)	3.54	2.65	0.55	5.97	(2.02)	1.31	2.16	3.77	5.33	
	EXCESS RETURN			0.04	0.04	0.20	0.71	(0.07)	0.01	(0.15)	0.26	0.34	0.50	0.81	0.34	
267	NYCERS-TOTAL TIPS - GROSS	2,834	4.28	(0.83)	(0.83)	(0.81)	3.06	4.74	(1.18)	3.50	(8.42)	2.07	1.42	3.44	3.64	06/01/2005
	ESTIMATED INVESTMENT FEES			(0.00)	(0.00)	(0.01)	(0.02)	(0.02)	(0.03)	(0.07)		(0.02)				
	NYCERS-TOTAL TIPS - NET MGR			(0.84)	(0.84)	(0.83)	3.04	4.72	(1.21)	3.42		2.05				
	BBG BARC GBL INF-LK: US TIPS (DLY)			(0.82)	(0.82)	(0.84)	3.01	4.68	(1.44)	3.64	(8.61)	2.04	1.37	3.32	3.49	
	EXCESS RETURN			(0.02)	(0.02)	0.02	0.03	0.04	0.23	(0.21)	0.19	0.02	0.05	0.12	0.15	
277	NYCERS-TOTAL HIGH YIELD - GROSS	2,658	4.01	2.20	2.20	1.97	7.00	15.32	(3.82)	2.94	8.31	7.23	5.27	8.59	7.71	10/01/1994
	ESTIMATED INVESTMENT FEES			(0.07)	(0.07)	(0.24)	(0.35)	(0.39)	(0.33)	(0.36)		(0.35)				
	NYCERS-TOTAL HIGH YIELD - NET MGR			2.13	2.13	1.73	6.65	14.93	(4.15)	2.58		6.88				
	HIGH YIELD CUSTOM BENCHMARK			2.40	2.40	2.30	7.03	15.48	(4.21)	2.78	6.17	7.52	5.17	7.79	6.91	
	EXCESS RETURN			(0.27)	(0.27)	(0.57)	(0.38)	(0.55)	0.06	(0.20)	2.14	(0.64)	0.09	0.80	0.80	

# Consolidated Performance Report

Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date
287 NYCERS- TOTAL BANK LOANS - GROSS	1,162	1.75	2.05	2.05	4.29	4.52	9.17	1.18	2.58	6.41	5.49	4.82		4.87	12/01/2012
ESTIMATED INVESTMENT FEES			(0.08)	(0.08)	(0.25)	(0.34)	(0.36)	(0.33)	(0.34)		(0.34)				
NYCERS-TOTAL BANK LOANS - NET MGR			1.97	1.97	4.04	4.18	8.81	0.85	2.24		5.14				
CSFB LEVERAGED LOAN INDEX			1.93	1.93	4.36	4.25	9.88	(0.38)	2.06	6.15	5.43	4.35		4.59	
EXCESS RETURN			0.04	0.04	(0.32)	(0.07)	(1.06)	1.23	0.18	0.26	(0.29)	0.46		0.28	

# Consolidated Performance Report

Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
<b>FIXED INCOME RETURN DETAIL</b>																
299	NYCERS- TOTAL CONVERTIBLE BONDS - GROSS	759	1.14	2.65	2.65	4.64	13.11	7.47	(0.85)	8.42	16.33	8.91	7.26	8.80	6.68	06/01/2008
	ESTIMATED INVESTMENT FEES			(0.10)	(0.10)	(0.31)	(0.46)	(0.46)	(0.43)	(0.47)		(0.45)				
	NYCERS-TOTAL CONVERTIBLE BONDS - NET MGR			2.54	2.54	4.33	12.65	7.01	(1.28)	7.95		8.46				
	BOFAML ALL CONVERTIBLE EX M AI (DAILY)			4.02	4.02	10.89	15.70	11.71	(2.75)	9.33	25.00	13.14	10.08	11.38	8.82	
	EXCESS RETURN			(1.48)	(1.48)	(6.56)	(3.05)	(4.70)	1.47	(1.38)	(8.68)	(4.68)	(2.81)	(2.58)	(2.14)	
309	NYCERS-TOTAL OPPORTUNISTIC FIXED INCOME	1,853	2.80	2.57	2.57	6.68	7.69	8.75	(2.18)	8.15	17.55	7.04	6.38	10.01	7.85	10/01/2007
	OPPORTUNISTIC FIXED INCOME JPMGHY / CSFB 50/50 BLEND PLUS 300			2.81	2.81	5.30	9.42	17.40	0.63	4.93	9.99	10.12	8.13	10.87	9.21	
	EXCESS RETURN			(0.24)	(0.24)	1.38	(1.73)	(8.66)	(2.81)	3.22	7.56	(3.09)	(1.75)	(0.86)	(1.37)	
319	NYCERS-TOTAL TARGETED INVESTMENTS (NO CASH) - GROSS	810	1.22	0.50	0.50	(1.21)	4.08	2.97	4.33	8.26	2.35	1.70	3.87	5.15	7.79	12/01/1984
	ESTIMATED INVESTMENT FEES			(0.05)	(0.05)	(0.14)	(0.20)	(0.21)	(0.21)	(0.22)	(0.22)	(0.20)	(0.21)	(0.22)	(0.10)	
	NYCERS-TOTAL TARGETED INVESTMENTS (NO CASH) - NET MGR			0.45	0.45	(1.35)	3.88	2.76	4.12	8.03	2.12	1.50	3.66	4.93	7.69	
	EMPLOYEES CUSTOM BENCHMARK (NO CASH)			0.03	0.03	(0.96)	3.10	2.38	1.42	6.03	(1.64)	1.43	2.31	3.70		
	EXCESS RETURN			0.42	0.42	(0.39)	0.78	0.38	2.70	2.00	3.76	0.06	1.35	1.23		
<b>CASH SUMMARY</b>																
331	EMPLOYEES' SHORT TERM - GROSS	480	0.72	0.48	0.48	1.34	1.09	0.76	0.31	0.36	0.19	1.02	0.79	0.81		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)		
	EMPLOYEES' SHORT TERM - NET MGR			0.48	0.48	1.34	1.09	0.76	0.31	0.36	0.19	1.02	0.79	0.81		
335	CASH ACCOUNTS	-	-													
337	SECURITY LENDING	-	-													



---

**New York City  
Employees' Retirement System**

# **Appendix B**

## **Public Markets Manager Performance Detail**

# Public Markets Manager Performance Detail

Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
<b>EQUITY SUMMARY</b>									
<b>US EQUITY</b>									
Blackrock Inst R 2000 Growth	305	0.46	5.57	5.57	15.85	22.32	11.29	(1.54)	5.70
RUSSELL 2000 GROWTH DAILY			5.52	5.52	15.76	22.17	11.32	(1.38)	5.60
Excess			0.05	0.05	0.09	0.15	(0.03)	(0.16)	0.10
Blackrock Inst R 2000 Value	46	0.07	1.67	1.67	7.17	7.95	31.61	(7.49)	4.90
RUSSELL 2000 VALUE DAILY			1.60	1.60	7.14	7.84	31.74	(7.47)	4.22
Excess			0.07	0.07	0.03	0.11	(0.13)	(0.02)	0.68
RAFI - SC Fundamental	803	1.21	2.86	2.86	9.50	9.63	27.57	(7.09)	4.56
RUSSELL 2000 (DAILY)			3.58	3.58	11.51	14.65	21.31	(4.41)	4.89
Excess			(0.72)	(0.72)	(2.01)	(5.01)	6.26	(2.68)	(0.34)
Ceredex SCV	238	0.36	1.49	1.49	5.71	10.59	29.34	(4.74)	2.58
RUSSELL 2000 VALUE DAILY			1.60	1.60	7.14	7.84	31.74	(7.47)	4.22
Excess			(0.12)	(0.12)	(1.43)	2.75	(2.40)	2.73	(1.64)
Wellington Small Core	239	0.36	3.74	3.74	9.46	19.90	19.25	(2.79)	9.89
RUSSELL 2000 (DAILY)			3.58	3.58	11.51	14.65	21.31	(4.41)	4.89
Excess			0.17	0.17	(2.05)	5.25	(2.05)	1.63	4.99
Blackrock Inst R 1000 Growth	4	0.01				30.22	7.04	5.58	12.90
RUSSELL 1000 GROWTH - DAILY						30.21	7.08	5.67	13.05
Excess						0.00	(0.04)	(0.09)	(0.15)
Blackrock Inst R 1000 Value	-0	-0.00				13.53	17.36	(3.94)	13.51
RUSSELL 1000 VALUE (DAILY)						13.66	17.34	(3.83)	13.45
Excess						(0.13)	0.02	(0.11)	0.06

1 Name changed from SSGA MSCI EAFE Small Cap Index to SSGA World ex USA Small Cap 12.2017  
 2 Assets were in transition as of 9/29/17

# Public Markets Manager Performance Detail

## Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
NYC ERS BLACKROCK R1000 CORE	15,269	23.04	7.44	7.44					
RUSSELL 1000 (DAILY)			7.42	7.42					
Excess			0.02	0.02					
VTL S&P 500 Fundamental	1	0.00				20.19	12.68	(1.25)	13.81
S&P 500 INDEX (DAILY)						21.83	11.96	1.38	13.69
Excess						(1.64)	0.72	(2.63)	0.12
RAFI - LC Fundamental	1,986	3.00	7.10	7.10	8.33	16.94	15.71	(3.17)	12.15
RUSSELL 1000 (DAILY)			7.42	7.42	10.49	21.69	12.05	0.92	13.24
Excess			(0.32)	(0.32)	(2.15)	(4.74)	3.66	(4.09)	(1.09)
<b>FUND OF FUNDS</b>									
NYCERS-TOTAL FUND OF FUNDS	124	0.19	4.75	4.75	12.13				
RUSSELL 2000 (DAILY)			3.58	3.58	11.51				
Excess			1.17	1.17	0.62				
NYCERS-TOTAL LEGATO	124	0.19	4.75	4.75	12.21				
RUSSELL 2000 (DAILY)			3.58	3.58	11.51				
Excess			1.17	1.17	0.69				
<b>NON - US EQUITY</b>									
ERS-Causeway	1,272	1.92	1.54	1.54	(4.27)	27.94	0.69	(2.41)	(4.94)
NYC Developed Value Benchmark			1.31	1.31	(1.50)	22.77	5.02	(5.68)	(5.39)
Excess			0.24	0.24	(2.77)	5.18	(4.33)	3.28	0.45
ERS-Sprucegrove	1,283	1.94	0.67	0.67	(3.14)	27.61	11.10	(9.77)	(3.69)
NYC Developed Value Benchmark			1.31	1.31	(1.50)	22.77	5.02	(5.68)	(5.39)
Excess			(0.63)	(0.63)	(1.64)	4.85	6.08	(4.08)	1.70
ERS-Baillie Gifford	1,368	2.06	(0.14)	(0.14)	8.66	39.40	2.12	(4.67)	(6.81)
NYC Developed Growth Benchmark			1.31	1.31	(1.50)	27.77	(3.04)	4.09	(4.43)
Excess			(1.44)	(1.44)	10.16	11.63	5.16	(8.76)	(2.38)

# Public Markets Manager Performance Detail

## Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
ERS-Walter Scott	1,300	1.96	3.22	3.22	3.05	27.94	5.26	0.04	(3.43)
NYC Developed Growth Benchmark			1.31	1.31	(1.50)	27.77	(3.04)	4.09	(4.43)
Excess			1.91	1.91	4.55	0.17	8.31	(4.05)	1.00
ERS-Acadian	442	0.67	(1.24)	(1.24)	(3.66)	37.50	5.15	8.71	(3.02)
S&P EPAC Small Cap USD NET			(0.45)	(0.45)	(2.58)	33.47	1.34	8.58	(3.43)
Excess			(0.78)	(0.78)	(1.07)	4.03	3.82	0.13	0.41
ERS-Pyramis	249	0.38	(1.94)	(1.94)	(2.75)	31.22	(0.81)	11.68	(5.51)
S&P EPAC Small Cap USD NET			(0.45)	(0.45)	(2.58)	33.47	1.34	8.58	(3.43)
Excess			(1.48)	(1.48)	(0.16)	(2.25)	(2.15)	3.09	(2.08)
ERS-SSGA	1,776	2.68	1.34	1.34	(1.12)	24.53	1.28	(0.42)	(5.00)
NYC Custom World ex US Index			1.31	1.31	(1.50)	24.12	1.00	(0.81)	(4.90)
Excess			0.03	0.03	0.38	0.41	0.28	0.39	(0.10)
ERS-SSGA World ex USA Small Cap <sup>1</sup>	488	0.74	(0.81)	(0.81)	(2.02)	33.66	2.52	9.97	
World ex USA SC PASSIVE CUSTOM BM			(0.85)	(0.85)	(2.28)	33.31	2.18	9.59	
Excess			0.04	0.04	0.26	0.35	0.33	0.39	
Generation GE MTA	3	0.00					9.93	7.04	11.39
MSCI World Index							7.51	(0.87)	4.94
Excess							2.42	7.91	6.45
<b>EMERGING MARKETS</b>									
ERS-BAILLIE GIFFORD EM	764	1.15	0.65	0.65	(9.26)	41.25	4.20	(13.67)	4.53
NYCERS Custom EM Index			1.82	1.82	(8.08)	34.18	13.66	(16.80)	(0.07)
Excess			(1.17)	(1.17)	(1.18)	7.07	(9.46)	3.14	4.60
ERS-ACADIAN EM	727	1.10	1.37	1.37	(10.53)	36.05	12.66	(18.25)	3.09
NYCERS Custom EM Index			1.82	1.82	(8.08)	34.18	13.66	(16.80)	(0.07)
Excess			(0.45)	(0.45)	(2.45)	1.86	(1.00)	(1.45)	3.16

<sup>1</sup> Name changed from SSGA MSCI EAFE Small Cap Index to SSGA World ex USA Small Cap 12.2017  
<sup>2</sup> Assets were in transition as of 9/29/17



# Public Markets Manager Performance Detail

## Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
ERS-PARAMETRIC EM	606	0.91	0.48	0.48	(9.51)	30.24	11.58	(19.39)	(1.55)
NYCERS Custom EM Index			1.82	1.82	(8.08)	34.18	13.66	(16.80)	(0.07)
Excess			(1.34)	(1.34)	(1.43)	(3.95)	(2.09)	(2.59)	(1.48)
ERS-DFA	762	1.15	2.22	2.22	(8.05)	34.27	20.31	(22.06)	(4.16)
NYCERS Custom EM Index			1.82	1.82	(8.08)	34.18	13.66	(16.80)	(0.07)
Excess			0.40	0.40	0.04	0.09	6.65	(5.26)	(4.09)
ERS-Blackrock EM	1,886	2.85	1.82	1.82	(7.41)	32.90	12.49	(17.92)	(1.52)
MSCI CUSTOM NYCERS EMERGING MARKETS (NET)			1.82	1.82	(7.64)	33.03	12.68	(17.71)	
Excess			0.00	0.00	0.23	(0.13)	(0.19)	(0.21)	
<b>INTERNATIONAL FOF</b>									
NYCERS-TOTAL INTERNATIONAL FOF	436	0.66	0.65	0.65	(1.88)				
NYC Blended Custom Benchmark for FoF (ERS)			1.11	1.11	(2.52)				
Excess			(0.46)	(0.46)	0.64				
NYCERS-TOTAL INTERNATIONAL BIVIUM	136	0.20	0.06	0.06	(3.41)				
NYC Blended Custom Benchmark for FoF (ERS)			1.11	1.11	(2.52)				
Excess			(1.05)	(1.05)	(0.90)				
NYCERS-TOTAL INTERNATIONAL FIS	159	0.24	0.90	0.90	(1.86)				
NYC Blended Custom Benchmark for FoF (ERS)			1.11	1.11	(2.52)				
Excess			(0.21)	(0.21)	0.66				
NYCERS-TOTAL INTERNATIONAL LEADING EDGE	142	0.21	0.97	0.97	(0.29)				
NYC Blended Custom Benchmark for FoF (ERS)			1.11	1.11	(2.52)				
Excess			(0.14)	(0.14)	2.22				

# Public Markets Manager Performance Detail

Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
<b>GLOBAL EQUITY</b>									
FIERA CAPITAL-WORLD	256	0.39							
MSCI World Index									
Excess									
<b>FIXED INCOME SUMMARY</b>									
<b>STRUCTURED FIXED INCOME</b>									
Neuberger Berman - Mortgage	511	0.77	(0.12)	(0.12)	(1.16)	2.43	1.50	1.42	6.99
FTSE MORTGAGE INDEX			(0.09)	(0.09)	(1.06)	2.47	1.59	1.56	6.12
Excess			(0.03)	(0.03)	(0.11)	(0.04)	(0.09)	(0.14)	0.86
Blackrock - Mortgage	856	1.29	(0.07)	(0.07)	(0.99)	2.69	2.17	1.67	6.75
FTSE MORTGAGE INDEX			(0.09)	(0.09)	(1.06)	2.47	1.59	1.56	6.12
Excess			0.01	0.01	0.07	0.22	0.58	0.11	0.62
Amundi Smith Breeden - Mortgage	339	0.51	(0.08)	(0.08)	(1.10)	2.24	2.06	1.73	6.36
FTSE MORTGAGE INDEX			(0.09)	(0.09)	(1.06)	2.47	1.59	1.56	6.12
Excess			0.01	0.01	(0.04)	(0.23)	0.47	0.16	0.23
Prudential - Corp - Credit	772	1.16	0.88	0.88	(1.98)	6.17	5.89	(0.32)	7.54
NYC - Investment Grade Credit			0.87	0.87	(2.07)	6.04	5.56	(0.65)	7.04
Excess			0.00	0.00	0.09	0.13	0.33	0.33	0.50
T. Rowe Price - Credit	766	1.16	0.87	0.87	(2.45)	6.85	6.00	0.13	7.91
NYC - Investment Grade Credit			0.87	0.87	(2.07)	6.04	5.56	(0.65)	7.04
Excess			(0.01)	(0.01)	(0.38)	0.81	0.44	0.78	0.87
Blackrock - Credit	334	0.50	1.12	1.12	(1.63)	6.38	5.50	(0.83)	7.48
NYC - Investment Grade Credit			0.87	0.87	(2.07)	6.04	5.56	(0.65)	7.04
Excess			0.24	0.24	0.44	0.35	(0.06)	(0.18)	0.44

# Public Markets Manager Performance Detail

## Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
Taplin Canida Habacht - Credit	206	0.31	0.93	0.93	(2.05)	6.91	9.51	(4.37)	7.83
NYC - Investment Grade Credit			0.87	0.87	(2.07)	6.04	5.56	(0.65)	7.04
Excess			0.06	0.06	0.02	0.87	3.95	(3.73)	0.79
Barrow Hanley - Credit	386	0.58	1.19	1.19	(2.04)	6.06	5.88	(0.09)	7.47
NYC - Investment Grade Credit			0.87	0.87	(2.07)	6.04	5.56	(0.65)	7.04
Excess			0.32	0.32	0.02	0.02	0.32	0.56	0.42
Blackrock - Gov't	2,153	3.25	(1.52)	(1.52)	(3.65)	4.76	1.24	0.69	11.98
NYC - Treasury Agency Plus Five			(1.51)	(1.51)	(3.60)	4.66	1.21	0.72	12.38
Excess			(0.02)	(0.02)	(0.04)	0.10	0.02	(0.03)	(0.40)
State Street - Gov't	2,266	3.42	(1.52)	(1.52)	(3.63)	4.93	1.57	0.46	12.10
NYC - Treasury Agency Plus Five			(1.51)	(1.51)	(3.60)	4.66	1.21	0.72	12.38
Excess			(0.02)	(0.02)	(0.03)	0.28	0.36	(0.26)	(0.28)
SSGA 1-3 Treasury Index	5,432	8.20	0.19	0.19	0.23	0.40			
FTSE USBIG Treasury 1-3 Y Index			0.20	0.20	0.28	0.42			
Excess			(0.01)	(0.01)	(0.05)	(0.02)			
SSGA Int Gov Bond Index <sup>2</sup>	1	0.00	0.54	0.54	1.44				
FTSE USBIG Treasury/Agency 1-10 y			(0.10)	(0.10)	(0.75)				
Excess			0.64	0.64	2.19				
91 DAY TREASURY BILL (DAILY)			0.49	0.49	1.30				
Excess			0.05	0.05	0.14				
<b>HIGH YIELD</b>									
Loomis, Sayles - High Yield	0	0.00				7.57	21.61	(7.67)	4.89
NYC-Loomis (BoA MLMSTII 7-03/BB&B PRIOR)						7.48	17.49	(4.64)	2.50
Excess						0.09	4.13	(3.02)	2.38
Oaktree - High Yield	388	0.59	2.29	2.29	1.45	5.78	14.91	(4.77)	1.52
BofAML HYM CONSTRAINED (DAILY)			2.44	2.44	2.52	7.48	17.49	(4.61)	2.51
Excess			(0.15)	(0.15)	(1.07)	(1.70)	(2.58)	(0.16)	(0.98)

# Public Markets Manager Performance Detail

## Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
NEUBERGER BERMAN - HIGH YIELD	416	0.63	2.26	2.26	2.19	5.78	14.70	(4.00)	2.14
BofAML HIGH YIELD MASTER II (DAILY)			2.44	2.44	2.52	7.48	17.49	(4.64)	2.50
Excess			(0.19)	(0.19)	(0.33)	(1.71)	(2.79)	0.64	(0.36)
Stone Harbor - High Yield	240	0.36	2.70	2.70	2.26	5.85	12.98	(4.54)	0.97
BofAML HIGH YIELD MASTER II (DAILY)			2.44	2.44	2.52	7.48	17.49	(4.64)	2.50
Excess			0.26	0.26	(0.26)	(1.64)	(4.51)	0.11	(1.54)
T. Rowe Price - High Yield	613	0.93	2.27	2.27	1.36	7.03	12.32	(1.28)	2.96
High Yield Custom Benchmark			2.40	2.40	2.30	7.03	15.48	(4.21)	2.78
Excess			(0.14)	(0.14)	(0.94)	(0.00)	(3.15)	2.93	0.18
Shenkman - High Yield	208	0.31	2.34	2.34	2.23	6.79	11.86	(2.24)	2.93
High Yield Custom Benchmark			2.40	2.40	2.30	7.03	15.48	(4.21)	2.78
Excess			(0.06)	(0.06)	(0.07)	(0.24)	(3.61)	1.97	0.14
Penn Capital Mgt	8	0.01				6.61	11.97	(1.26)	0.84
FTSE BB & B						7.03	15.48	(4.21)	2.78
Excess						(0.42)	(3.51)	2.95	(1.95)
Fort Washington	0	0.00				7.57	12.55	(4.43)	2.18
FTSE BB & B						7.03	15.48	(4.21)	2.78
Excess						0.54	(2.93)	(0.22)	(0.60)
Eaton Vance - HY	265	0.40							
BofAML HIGH YIELD MASTER II (DAILY)									
Excess									
MacKay Shields	180	0.27							
BofAML HIGH YIELD MASTER II (DAILY)									
Excess									

# Public Markets Manager Performance Detail

## Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
Nomura HY	280	0.42							
BofAML HIGH YIELD MASTER II (DAILY)									
Excess									
High Yield Transition	59	0.09							
<b>BANK LOANS</b>									
Babson BL	318	0.48	2.29	2.29	4.45	4.47	8.46	0.12	1.99
CSFB LEVERAGED LOAN INDEX			1.93	1.93	4.36	4.25	9.88	(0.38)	2.06
Excess			0.36	0.36	0.09	0.22	(1.42)	0.50	(0.07)
Credit Suisse BL	326	0.49	1.95	1.95	4.06	4.66	8.95	2.57	2.67
CSFB LEVERAGED LOAN INDEX			1.93	1.93	4.36	4.25	9.88	(0.38)	2.06
Excess			0.02	0.02	(0.30)	0.41	(0.92)	2.96	0.61
Guggenheim BL	205	0.31	1.78	1.78	3.80	3.82	7.84	2.07	2.88
CSFB LEVERAGED LOAN INDEX			1.93	1.93	4.36	4.25	9.88	(0.38)	2.06
Excess			(0.15)	(0.15)	(0.55)	(0.43)	(2.03)	2.45	0.83
ERS-Invesco BL	313	0.47	1.78	1.78	3.76	3.64	9.68	(0.91)	1.65
CSFB LEVERAGED LOAN INDEX			1.93	1.93	4.36	4.25	9.88	(0.38)	2.06
Excess			(0.15)	(0.15)	(0.59)	(0.61)	(0.20)	(0.53)	(0.41)
<b>TIPS</b>									
State Street TIPS MTA	2,137	3.23	(0.83)	(0.83)	(0.85)	3.06	4.73	(1.35)	3.57
BBG BARC Gbl Inf-Lk: US TIPS (Dly)			(0.82)	(0.82)	(0.84)	3.01	4.68	(1.44)	3.64
Excess			(0.01)	(0.01)	(0.01)	0.05	0.04	0.09	(0.07)
Blackrock TIPS MTA	697	1.05	(0.85)	(0.85)	(0.75)	2.98	4.71	(1.24)	3.74
BBG BARC Gbl Inf-Lk: US TIPS (Dly)			(0.82)	(0.82)	(0.84)	3.01	4.68	(1.44)	3.64
Excess			(0.03)	(0.03)	0.10	(0.02)	0.02	0.20	0.10

# Public Markets Manager Performance Detail



## Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
<b>CONVERTIBLE BONDS</b>									
Advent Conv Bonds	445	0.67	2.73	2.73	3.85	7.75	7.35	(1.92)	4.68
BofA ML U.S. Convertible Yield Alternative			1.23	1.23	4.78	9.45	9.96	(8.77)	2.75
Excess			1.49	1.49	(0.93)	(1.69)	(2.61)	6.85	1.93
Victory - Conv Bonds	314	0.47	2.28	2.28	5.01	20.54	6.47	(0.24)	13.76
BofA Merrill Lynch US Investment Grade Convertible Bond Index			2.47	2.47	6.76	20.99	14.23	1.68	15.69
Excess			(0.19)	(0.19)	(1.75)	(0.45)	(7.77)	(1.92)	(1.93)
<b>CORE FI - EMERGING MANAGERS</b>									
New Century Adv LLC (Core)	27	0.04	(0.08)	(0.08)	(1.39)	4.24	1.98	(0.04)	6.09
BBG BARC Agg (Dly)			0.02	0.02	(1.60)	3.54	2.65	0.55	5.97
Excess			(0.10)	(0.10)	0.20	0.70	(0.67)	(0.59)	0.12
Hillswick	10	0.01	(0.35)	(0.35)	(2.12)	2.56			
BBG BARC Agg (Dly)			0.02	0.02	(1.60)	3.54			
Excess			(0.37)	(0.37)	(0.52)	(0.98)			
Integrity	12	0.02	0.10	0.10	(1.41)	3.92			
BBG BARC Agg (Dly)			0.02	0.02	(1.60)	3.54			
Excess			0.08	0.08	0.19	0.38			
Pugh Capital Mgmt Inc (Core)	30	0.05	0.11	0.11	(1.65)	4.25	3.13	0.69	6.05
BBG BARC Agg (Dly)			0.02	0.02	(1.60)	3.54	2.65	0.55	5.97
Excess			0.09	0.09	(0.06)	0.71	0.49	0.14	0.08
Ramirez Asset	39	0.06	0.22	0.22	(1.01)	4.80	3.47	0.94	
BBG BARC Agg (Dly)			0.02	0.02	(1.60)	3.54	2.65	0.55	
Excess			0.20	0.20	0.59	1.25	0.82	0.39	

1 Name changed from SSGA MSCI EAFE Small Cap Index to SSGA World ex USA Small Cap 12.2017  
2 Assets were in transition as of 9/29/17

# Public Markets Manager Performance Detail



## Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
<b>CORE FI - DEVELOPING MANAGERS</b>									
ERS-LM Capital	294	0.44	0.59	0.59	(1.50)	3.85	3.47	0.83	5.67
BBG BARC Agg (Dly)			0.02	0.02	(1.60)	3.54	2.65	0.55	5.97
Excess			0.57	0.57	0.10	0.31	0.82	0.28	(0.30)
GIA	107	0.16	0.33	0.33	(1.25)	4.35	4.00		
BBG BARC Agg (Dly)			0.02	0.02	(1.60)	3.54	2.65		
Excess			0.31	0.31	0.35	0.80	1.35		
<b>ECONOMICALLY TARGETED INVESTMENTS</b>									
AFL-CIO HOUSING INV TRUST	303	0.46	(0.18)	(0.18)	(1.76)	3.17	1.94	1.13	6.10
BBG BARC Agg (Dly)			0.02	0.02	(1.60)	3.54	2.65	0.55	5.97
Excess			(0.20)	(0.20)	(0.16)	(0.38)	(0.71)	0.58	0.14
ACCESS RBC	156	0.24	(0.16)	(0.16)	(1.52)	2.64	1.61	1.83	6.66
Access RBC Benchmark			(0.13)	(0.13)	(0.92)	1.96	1.52	1.40	5.08
Excess			(0.03)	(0.03)	(0.60)	0.69	0.09	0.43	1.58
CPC CONST FACILITY	7	0.01	0.55	0.55	2.61	6.07	(3.95)	12.90	
CPC CONST BENCHMARK			1.00	1.00	2.91	3.34	3.03	2.90	
Excess			(0.44)	(0.44)	(0.30)	2.73	(6.99)	10.00	
BOA-PPAR (FNMA)	22	0.03	0.54	0.54	(0.98)	5.21	4.07	42.03	13.31
FNMA Plus 85bps			0.08	0.08	(0.47)	3.61	2.38	2.50	7.13
Excess			0.47	0.47	(0.51)	1.60	1.69	39.53	6.19
BOA-PPAR (GNMA)	15	0.02	(0.38)	(0.38)	(1.72)	4.08	3.13	8.04	15.61
GNMA Plus 65bps			0.14	0.14	(0.52)	2.53	2.28	2.02	6.65
Excess			(0.52)	(0.52)	(1.20)	1.56	0.85	6.03	8.96

1 Name changed from SSGA MSCI EAFE Small Cap Index to SSGA World ex USA Small Cap 12.2017  
2 Assets were in transition as of 9/29/17

# Public Markets Manager Performance Detail



## Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
CCD-PPAR (FNMA)	12	0.02	0.69	0.69	(1.52)	5.26	3.71	6.69	25.71
FNMA Plus 85bps			0.08	0.08	(0.47)	3.61	2.38	2.50	7.13
Excess			0.61	0.61	(1.05)	1.65	1.33	4.20	18.58
CCD-PPAR (GNMA)	6	0.01	2.54	2.54	(0.06)	3.10	2.78	5.08	15.37
GNMA Plus 65bps			0.14	0.14	(0.52)	2.53	2.28	2.02	6.65
Excess			2.40	2.40	0.46	0.57	0.50	3.06	8.72
CFSB-PPAR (GNMA)	2	0.00	1.41	1.41	(1.51)	3.83	3.21	5.90	15.34
GNMA Plus 65bps			0.14	0.14	(0.52)	2.53	2.28	2.02	6.65
Excess			1.28	1.28	(0.99)	1.30	0.93	3.88	8.69
CPC-PPAR (FNMA)	87	0.13	1.15	1.15	(0.92)	5.06	6.15	8.96	13.91
FNMA Plus 85bps			0.08	0.08	(0.47)	3.61	2.38	2.50	7.13
Excess			1.08	1.08	(0.46)	1.45	3.77	6.46	6.78
CPC - PPAR (GNMA)	80	0.12	2.06	2.06	(0.96)	2.58	2.86	5.08	8.41
GNMA Plus 65bps			0.14	0.14	(0.52)	2.53	2.28	2.02	6.65
Excess			1.93	1.93	(0.44)	0.05	0.58	3.07	1.76
JPMC-PPAR (FNMA)	67	0.10	0.74	0.74	(1.58)	9.96	7.94	6.18	12.06
FNMA Plus 85bps			0.08	0.08	(0.47)	3.61	2.38	2.50	7.13
Excess			0.67	0.67	(1.11)	6.35	5.56	3.68	4.93
JPMC - PPAR (GNMA)	32	0.05	1.97	1.97	(0.19)	2.63	2.99	6.04	13.75
GNMA Plus 65bps			0.14	0.14	(0.52)	2.53	2.28	2.02	6.65
Excess			1.83	1.83	0.33	0.11	0.72	4.03	7.10
LIIF-PPAR (FNMA)	9	0.01	0.66	0.66	(1.69)	9.55	5.03	6.29	38.12
FNMA Plus 85bps			0.08	0.08	(0.47)	3.61	2.38	2.50	7.13
Excess			0.58	0.58	(1.22)	5.94	2.65	3.79	30.99

1 Name changed from SSGA MSCI EAFE Small Cap Index to SSGA World ex USA Small Cap 12.2017  
2 Assets were in transition as of 9/29/17



# Public Markets Manager Performance Detail



## Net Returns Through September 30, 2018

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014
LIIF-PPAR (GNMA)	3	0.00	1.14	1.14	0.20	2.52	3.88	3.92	9.74
GNMA Plus 65bps			0.14	0.14	(0.52)	2.53	2.28	2.02	6.65
Excess			1.01	1.01	0.71	(0.01)	1.61	1.91	3.09
NCBCI PPAR (FNMA)	0	0.00	4.24	4.24	1.24	1.75	3.46	4.97	14.93
FNMA Plus 85bps			0.08	0.08	(0.47)	3.61	2.38	2.50	7.13
Excess			4.16	4.16	1.71	(1.86)	1.07	2.47	7.81
NCBCI-PPAR (GNMA)	2	0.00	2.56	2.56	(0.20)	3.01	3.51	5.53	16.66
GNMA Plus 65bps			0.14	0.14	(0.52)	2.53	2.28	2.02	6.65
Excess			2.42	2.42	0.32	0.48	1.23	3.52	10.01
NHS-PPAR (GNMA)	1	0.00	3.02	3.02	0.15	(2.93)	3.58	4.90	13.73
GNMA Plus 65bps			0.14	0.14	(0.52)	2.53	2.28	2.02	6.65
Excess			2.89	2.89	0.66	(5.46)	1.30	2.89	7.08
WELLS FARGO-PPAR MTA 2013 (FNMA)	5	0.01	2.58	2.58					
FNMA Plus 85bps			0.08	0.08					
Excess			2.51	2.51					
<b>CASH</b>									
EMPLOYEES' SHORT TERM	480	0.72	0.48	0.48	1.34	1.09	0.76	0.31	0.36
91 DAY T-BILL			0.49	0.49	1.30	0.86	0.33	0.05	0.02
Excess			(0.01)	(0.01)	0.04	0.23	0.44	0.27	0.34
Cash Accounts	0	0.00							
SECURITY LENDING	0	0.00							

1 Name changed from SSGA MSCI EAFE Small Cap Index to SSGA World ex USA Small Cap 12.2017  
2 Assets were in transition as of 9/29/17



---

**New York City  
Employees' Retirement System**

# Appendix C

## Alternative Assets Manager Performance Detail

# Alternative Assets Manager Performance Detail



Through June 30, 2018

	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
<b>TOTAL PRIVATE EQUITY</b>		10,433,763,619	8,718,684,470	7,914,301,769	4,664,847,099	1.44	9.9%
<b>TOTAL LIQUIDATED</b>		666,308,646	772,353,911	948,952,024	-	1.23	6.3%
<b>TOTAL ACTIVE</b>		9,767,454,973	7,946,330,560	6,965,349,745	4,664,847,099	1.46	10.3%
<b>TOTAL ACTIVE</b>							
Cypress Merchant Banking Partners II, L.P.	1999	45,172,972	53,944,269	50,584,154	27,648	0.94	-1.2%
Lincolnshire Equity Fund II, L.P.	1999	18,397,347	19,261,466	37,375,300	683,867	1.98	24.6%
Solera Partners, L.P.	2000	19,999,779	26,562,108	41,635,156	473,175	1.59	7.6%
SCP Private Equity Partners II, L.P.	2000	27,442,463	30,827,225	10,819,873	1,982,577	0.42	-11.3%
Apollo Investment Fund V, L.P.	2001	40,000,000	62,528,643	123,248,630	671,503	1.98	38.6%
RRE Ventures III, L.P.	2001	19,999,999	26,323,260	34,078,940	1,307,017	1.34	5.5%
Thomas, McNerney & Partners, L.P.	2002	20,000,000	20,000,000	10,058,105	1,983,179	0.60	-8.4%
Landmark Equity Partners XI, L.P.	2002	55,000,000	52,284,778	80,358,502	131,104	1.54	23.3%
FS Equity Partners V, L.P.	2003	25,000,000	21,419,958	41,861,469	1,759,231	2.04	15.4%
Blackstone Capital Partners IV, L.P.	2003	34,418,762	38,818,072	98,629,819	885,469	2.56	39.7%
Ares Corporate Opportunities Fund, L.P.	2003	45,000,000	53,984,770	80,476,920	2,516,689	1.54	13.4%
Markstone Capital Partners, LP	2004	40,000,000	46,899,103	19,822,611	272,215	0.43	-48.6%
FdG Capital Partners II LP	2004	35,000,000	37,714,408	43,600,092	1,185,842	1.19	3.4%
Paladin Homeland Security Fund (NY City), L.P.	2004	15,000,000	16,513,285	6,211,471	110,713	0.38	-14.2%
Lincolnshire Equity Fund III, L.P.	2004	55,000,000	54,767,849	77,732,618	21,427,123	1.81	28.8%
Yucaipa American Alliance Fund I, LP	2004	90,000,000	114,094,892	95,624,614	42,300,553	1.21	4.1%
New York/Fairview Emerging Managers Fund, L.P.-Tranche 1	2004	32,000,000	32,862,069	29,751,189	8,316,884	1.16	2.5%
Aurora Equity Partners III L.P.	2004	50,000,000	54,126,788	87,435,881	376,763	1.62	13.5%
Trilantic Capital Partners III L.P.	2004	45,088,848	39,896,989	59,922,935	112,677	1.50	12.4%
Palladium Equity Partners III, L.P.	2005	35,000,000	36,318,404	67,048,505	6,028,290	2.01	16.7%
New Mountain Partners II, L.P.	2005	46,451,615	42,071,397	81,045,604	1,648,065	1.97	13.8%
VSS Communications Partners IV, L.P.	2005	24,690,337	28,434,380	21,012,981	42,350	0.74	-5.1%
Prism Venture Partners V-A, L.P.	2005	30,000,000	30,762,722	19,062,102	444,167	0.63	-8.8%
NB New York City Growth Fund	2005	34,819,694	34,819,694	36,646,515	-	1.05	-0.7%
Snow Phipps Group, L.P.	2005	20,000,000	23,827,483	20,892,466	9,544,036	1.28	5.7%
GI Partners Fund II L.P.	2005	35,000,000	35,453,490	56,981,934	53,891	1.61	7.7%
Blackstone Mezzanine Partners II, L.P.	2005	21,346,698	23,488,553	31,752,958	298,643	1.36	8.0%
Psilos Group Partners III, L.P.	2005	35,000,000	37,205,819	17,948,760	22,410,479	1.08	1.4%
USPF II Institutional Fund, L.P.	2005	65,000,000	85,734,194	82,299,936	28,270,575	1.29	4.4%
JP Morgan Fleming (Tranche A)	2005	43,000,000	42,480,963	39,191,747	17,013,869	1.32	5.4%
Aisling Capital II, LP	2006	6,680,102	7,853,301	6,821,024	1,101,437	1.01	0.2%

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

# Alternative Assets Manager Performance Detail



Through June 30, 2018

	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
InterMedia Partners VII, L.P.	2006	25,000,000	29,198,197	29,591,747	1,706,479	1.07	1.1%
Terra Firma Capital Partners III, L.P.	2006	52,778,181	53,467,890	14,509,035	9,345,844	0.45	-10.2%
BDCM Opportunity Fund II, L.P.	2006	25,000,000	37,160,726	58,739,441	27,961,501	2.33	17.5%
Blackstone Capital Partners V, L.P.	2006	121,624,827	129,317,991	200,388,311	11,981,674	1.64	8.1%
Avista Capital Partners, L.P.	2006	45,000,000	59,165,902	72,036,625	1,612,991	1.24	4.6%
GSC Recovery III, L.P.	2006	25,000,000	28,228,414	33,208,011	269,413	1.19	4.3%
Apollo Investment Fund VI, L.P.	2006	90,000,000	115,838,240	155,713,859	19,102,053	1.51	8.8%
Landmark Equity Partners XIII, L.P.	2006	50,000,000	47,997,218	49,687,368	12,245,399	1.29	5.2%
Ares Corporate Opportunities Fund II, L.P.	2006	50,000,000	54,760,870	88,267,769	3,556,905	1.68	13.2%
Fairview Ventures Fund III, L.P.	2006	25,000,000	26,284,335	29,578,013	22,178,989	1.97	13.8%
Ampersand 2006	2006	25,000,000	25,000,000	41,455,039	23,437,190	2.60	16.1%
CCMP Capital Investors II, L.P.	2006	30,000,000	32,911,805	56,364,117	302,604	1.72	13.5%
CLP 2014 (fka Perseus Partners VII)	2006	30,000,000	35,099,499	13,800,530	(35,007)	0.39	-20.8%
Thomas, McNerney & Partners II, L.P.	2006	25,000,000	25,349,167	49,944,019	4,730,775	2.16	16.3%
Catterton Partners VI, L.P.	2006	45,000,000	51,243,868	72,559,948	23,674,408	1.88	12.1%
First Reserve Fund XI, L.P.	2006	45,000,000	47,820,682	29,053,614	3,038,180	0.67	-8.9%
Arsenal Capital Partners II, LP	2006	22,500,000	27,276,973	36,293,108	12,240,931	1.78	11.2%
RRE Ventures IV, L.P.	2006	35,000,000	44,063,397	24,528,820	42,176,684	1.51	6.5%
MidOcean Partners III, L.P.	2006	58,234,777	69,283,446	120,727,591	20,369,225	2.04	13.0%
GF Capital Private Equity Fund, L.P.	2006	20,000,000	20,716,299	26,087,171	12,167,184	1.85	13.6%
The Fourth Cinven Fund	2006	69,252,088	72,910,838	105,001,759	319,527	1.44	7.4%
Pegasus Partners IV, L.P.	2007	30,000,000	36,210,832	23,854,519	11,202,470	0.97	-0.6%
FTVentures III, LP	2007	24,201,990	26,802,873	46,944,173	9,771,401	2.12	15.9%
Co-Investment Partners Europe, L.P.	2007	39,881,878	42,506,558	49,511,763	4,669,217	1.27	4.8%
Montreux Equity Partners IV, L.P.	2007	20,000,000	20,000,000	11,044,696	17,764,832	1.44	6.0%
Quaker BioVentures II, L.P.	2007	20,000,000	19,058,740	15,700,278	6,526,249	1.17	3.7%
SCP Vitalife Partners II Fund	2007	20,000,000	20,099,698	1,579	9,596,534	0.48	-9.9%
Craton Equity Investors I, L.P.	2007	20,000,000	20,089,805	2,153,907	260,199	0.12	-30.5%
Nautic Partners VI, L.P.	2007	30,000,000	33,794,398	70,848,915	8,924,951	2.36	19.0%
Constellation Venture Capital III, L.P.	2007	25,000,000	28,575,035	13,995,719	8,150,797	0.78	-4.4%
United States Power Fund III, L.P.	2007	65,000,000	76,903,642	77,120,314	23,164,692	1.30	4.9%
Halyard Capital Fund II, L.P.	2007	25,000,000	21,505,407	26,003,376	4,871,304	1.44	6.7%
Carlyle Partners V, L.P.	2007	70,000,000	72,142,215	114,409,355	13,509,189	1.77	13.8%
PCG Clean Energy & Technology Fund (East), LLC	2007	90,000,000	81,429,594	14,013,084	26,120,696	0.49	-10.4%
GSO Capital Opportunities Fund LP	2007	45,000,000	67,377,298	95,627,284	1,086,900	1.44	17.5%
StarVest Partners II, L.P.	2007	25,000,000	25,051,830	5,254,221	15,199,192	0.82	-3.3%

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



Through June 30, 2018

	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
New Mountain Partners III, L.P.	2007	100,000,000	101,697,235	130,503,404	64,969,283	1.92	13.2%
Vista Equity Partners Fund III, L.P.	2007	30,000,000	32,008,969	73,920,673	8,378,057	2.57	27.5%
Trilantic Capital Partners IV L.P.	2007	69,028,637	72,022,699	106,245,500	9,497,253	1.61	14.1%
RLJ Equity Partners Fund I, L.P.	2007	20,000,000	21,774,503	22,531,306	15,642,090	1.75	12.6%
Pine Brook Capital Partners, L.P.	2007	30,000,000	33,749,906	38,661,282	6,467,172	1.34	7.9%
Paladin III (NY City), L.P.	2008	30,000,000	39,598,771	28,239,981	28,353,522	1.43	8.0%
Relativity Fund, L.P.	2008	10,877,829	10,773,614	5,272,425	122,969	0.50	-10.8%
Apollo Investment Fund VII, L.P.	2008	100,000,000	120,427,987	187,623,960	23,576,078	1.75	23.4%
NGN BioMed Opportunity II, L.P.	2008	20,000,000	19,151,821	7,946,209	12,433,104	1.06	1.0%
Carpenter Community BancFund-A, L.P.	2008	20,000,000	19,569,498	29,600,992	4,001,333	1.72	8.5%
Riverstone/Carlyle Global Energy & Power Fund IV, L.P.	2008	45,000,000	50,751,701	40,550,843	21,453,998	1.22	5.4%
Yucaipa American Alliance Fund II, LP	2008	120,000,000	163,744,290	97,293,704	157,842,032	1.56	9.1%
Levine Leichtman Capital Partners IV, L.P.	2008	35,000,000	37,384,126	52,817,272	13,561,263	1.78	19.7%
Lee Equity Partners Fund, L.P.	2008	36,779,895	50,519,026	61,415,282	211,294	1.22	6.3%
New York/Fairview Emerging Managers Fund, L.P.-Tranche 2	2008	45,000,000	44,397,265	36,288,530	41,891,218	1.76	14.4%
Yucaipa Corporate Initiatives Fund II, LP	2008	42,092,788	41,094,236	12,669,673	25,958,434	0.94	-1.0%
Leeds Equity Partners V, L.P.	2008	60,000,000	57,812,601	58,038,076	56,810,327	1.99	17.5%
GI Partners Fund III L.P.	2008	45,000,000	48,592,079	70,014,239	6,504,638	1.57	13.2%
Ares Corporate Opportunities Fund III, L.P.	2008	75,000,000	90,326,274	126,701,097	71,876,417	2.20	22.0%
GCM Grosvenor NYCERS Emerging Manager Fund, L.P.	2008	116,737,374	137,734,099	114,107,303	78,636,866	1.40	10.6%
First Reserve Fund XII, L.P.	2008	45,000,000	49,204,883	24,517,527	8,596,413	0.67	-9.4%
Landmark Equity Partners XIV, L.P.	2008	109,120,000	105,682,830	110,407,371	27,503,223	1.30	9.9%
Crestview Partners II, L.P.	2008	50,000,000	56,212,339	65,438,059	33,504,073	1.76	14.5%
Avista Capital Partners II, L.P.	2008	75,000,000	97,206,003	150,159,298	25,289,896	1.80	16.5%
Blue Wolf Capital Fund II, L.P.	2008	25,000,000	27,167,904	27,909,784	9,536,912	1.38	7.8%
Bridgepoint Europe IV	2008	26,660,643	26,766,098	27,050,911	15,098,767	1.57	11.2%
Aisling Capital III, LP	2008	14,000,000	15,763,550	21,598,755	13,384,956	2.22	25.9%
Onex Partners III LP	2008	75,000,000	81,578,819	102,042,274	42,222,124	1.77	14.3%
Welsh, Carson, Anderson & Stowe XI, L.P.	2009	40,000,000	40,000,000	44,396,071	22,508,835	1.67	13.2%
FS Equity Partners VI, L.P.	2009	32,500,000	32,555,205	62,473,687	39,351,928	3.13	26.0%
Lincolnshire Equity Fund IV, L.P.	2009	27,500,000	29,035,346	25,012,835	20,349,467	1.56	11.6%
Lexington Capital Partners VII, L.P.	2009	50,000,000	44,200,303	52,103,646	16,376,165	1.55	14.4%
Snow Phipps II, L.P.	2010	30,000,000	33,154,519	23,881,598	20,221,473	1.33	9.6%
JP Morgan Fleming (Tranche B)	2010	35,000,000	35,272,355	20,076,064	29,627,191	1.41	8.7%
Trident V, L.P.	2010	110,000,000	123,304,556	97,604,809	97,594,764	1.58	11.4%
Blackstone Capital Partners VI, L.P.	2011	120,000,000	122,806,888	66,269,215	126,644,084	1.57	14.4%

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

# Alternative Assets Manager Performance Detail



Through June 30, 2018

	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Ampersand 2011	2011	25,000,000	25,000,000	29,457,057	33,935,754	2.54	21.2%
BDCM Opportunity Fund III, L.P.	2011	45,000,000	60,142,246	20,728,277	59,337,536	1.33	8.8%
AXA Secondary Fund V B L.P.	2011	120,000,000	98,289,407	135,473,060	25,339,809	1.64	16.6%
Wellspring Capital Partners V, L.P.	2011	40,000,000	40,305,719	43,967,635	17,676,628	1.53	16.0%
EQT VI, L.P.	2011	106,153,491	109,735,801	96,805,710	90,659,142	1.71	15.4%
Pegasus Partners V, L.P.	2011	20,789,916	23,877,216	15,051,753	25,548,000	1.70	15.1%
BC European Capital IX	2011	131,448,163	140,711,317	88,086,537	112,213,560	1.42	11.7%
American Securities Partners VI, L.P.	2011	80,000,000	85,737,419	122,590,988	39,534,162	1.89	22.3%
Vista Equity Partners Fund IV, L.P.	2011	100,000,000	103,049,618	117,335,988	81,749,988	1.93	19.0%
Warburg Pincus Private Equity XI, L.P.	2012	110,000,000	117,033,488	71,662,752	108,028,485	1.54	14.9%
Trilantic Capital Partners V L.P.	2012	70,000,000	72,068,087	54,816,759	51,557,739	1.48	19.4%
Palladium Equity Partners IV, L.P.	2012	55,000,000	44,306,372	24,355,205	40,940,801	1.47	15.1%
Ares Corporate Opportunities Fund IV, L.P.	2012	125,000,000	126,511,836	66,557,047	112,180,419	1.41	13.4%
Green Equity Investors VI, L.P.	2012	120,000,000	128,300,416	74,496,178	125,730,779	1.56	16.6%
Platinum Equity Capital Partners III, L.P.	2012	100,000,000	82,294,117	85,689,852	73,298,070	1.93	41.3%
<u>NYCERS - 2012 Emerging Manager Program4</u>	2012	<u>139,600,000</u>	<u>125,825,713</u>	<u>37,275,473</u>	<u>137,365,819</u>	<u>1.39</u>	<u>14.9%</u>
Carlyle Partners VI, L.P.	2013	75,000,000	77,492,043	27,110,150	72,356,225	1.28	13.3%
Carlyle Partners VI, L.P. (Side Car)	2014	8,250,000	5,875,005	315,288	6,048,901	1.08	3.3%
Landmark Equity Partners XV, L.P.	2013	75,000,000	50,370,249	28,176,676	35,793,917	1.27	14.8%
Apollo Investment Fund VIII, L.P.	2013	140,000,000	119,721,058	32,090,796	125,802,900	1.32	15.4%
Landmark - NYC Fund I, L.P.	2013	25,000,000	20,043,953	9,606,569	18,719,312	1.41	18.6%
CVC Capital Partners VI, L.P.	2014	123,890,161	107,617,231	17,844,854	115,451,021	1.24	13.0%
Crestview Partners III, L.P.	2013	66,000,000	28,449,427	5,101,711	29,970,315	1.23	10.9%
Crestview Partners III (Co-Investment B), L.P.	2013	22,000,000	16,704,736	1,083,292	18,448,169	1.17	9.6%
Olympus Growth Fund VI, L.P.	2014	75,000,000	53,009,662	17,430,727	56,075,830	1.39	19.0%
ASF VI B L.P.	2014	83,000,000	53,666,607	22,175,553	53,496,120	1.41	14.4%
ASF VI B NYC Co-Invest L.P.	2014	27,000,000	19,969,085	13,149,532	14,844,274	1.40	14.4%
Vista Equity Partners Fund V, L.P.	2014	125,000,000	126,855,788	28,038,003	188,586,595	1.71	22.6%
Lexington Capital Partners VIII, L.P.	2014	110,000,000	63,400,114	25,512,794	63,761,681	1.41	28.8%
Siris Partners III, L.P.	2015	31,000,000	21,644,122	1,343,052	26,911,503	1.31	18.2%
Centerbridge Capital Partners III, L.P.	2015	23,700,000	12,906,821	2,595,810	13,331,697	1.23	13.3%
Welsh, Carson, Anderson & Stowe XII, L.P.	2015	78,500,000	47,594,193	9,275,331	54,263,585	1.34	21.0%
Warburg Pincus Private Equity XII, L.P.	2015	205,500,000	108,897,547	3,020,850	122,606,085	1.15	12.4%
ASF VII B L.P.	2015	94,500,000	27,305,007	462,593	34,340,367	1.27	23.9%
ASF VII B NYC Co-Invest L.P.	2015	46,000,000	22,308,913	-	33,858,534	1.52	94.2%
EQT VII, L.P.	2015	163,375,272	106,205,368	8,077,726	124,876,710	1.25	17.6%
American Securities Partners VII, L.P.	2015	80,000,000	45,093,757	1,133,185	48,216,981	1.09	8.2%

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

# Alternative Assets Manager Performance Detail



Through June 30, 2018

	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Bridgepoint Europe V L.P.	2015	62,139,653	43,521,348	5,959,601	49,270,043	1.27	21.0%
Bridgepoint Europe V Co-Invest	2015	18,368,732	14,453,317	-	20,038,842	1.39	NM
<i>NYCERS - 2015 Emerging Manager Program5</i>	2015	<u>190,400,000</u>	<u>29,907,289</u>	<u>1,860,624</u>	<u>34,228,276</u>	<u>1.21</u>	<u>26.6%</u>
Vista Equity Partners Fund VI, L.P.	2016	158,000,000	115,494,294	378,662	128,576,321	1.12	8.6%
Platinum Equity Capital Partners IV, L.P.	2016	111,000,000	58,495,566	5,745,609	64,868,112	1.21	NM
Platinum Equity Capital Partners IV Co-Investment, L.P.	2018	16,000,000	-	-	-	-	N/A
Apax IX USD, L.P.	2016	127,000,000	56,233,233	1,204,490	61,067,944	1.11	NM
Green Equity Investors VII, L.P.	2017	95,000,000	35,315,703	376,189	35,466,878	1.01	NM
Ares Corporate Opportunities Fund V, L.P.	2017	95,000,000	32,129,288	1,290,266	30,747,458	1.00	NM
KKR Americas Fund XII, L.P.	2017	158,000,000	22,387,376	-	22,376,764	1.00	NM
BC European Capital X	2017	91,238,982	22,141,443	-	20,430,537	0.92	NM
BCEC X Co-Investment	2017	36,369,414	10,715,583	-	10,317,525	0.96	NM
Warburg Pincus Financial Sector, L.P.	2017	104,000,000	16,479,156	5,304,000	10,004,647	0.93	NM
Platinum Equity Small Cap Fund, L.P.	2018	41,000,000	1,771,200	-	1,525,104	0.86	NM
EQT VIII, L.P.	2018	113,756,175	-	-	-	-	N/A
EQT VIII Co-Investment	2018	41,365,882	-	-	-	-	N/A
Apollo Investment Fund IX, L.P.	2018	256,000,000	-	-	(841,887)	-	NM
Bridgepoint Europe VI	2018	124,256,745	-	-	-	-	N/A
Bridgepoint Europe VI Co-Invest	2018	31,064,186	-	-	-	-	N/A
Crestview Partners IV, L.P.	2018	71,000,000	-	-	-	-	N/A
Crestview Partners IV (Co-Investment), L.P.	2018	23,666,667	-	-	-	-	N/A
CVC Capital Partners VII, L.P.	2018	159,842,010	-	-	1,333,901	-	NM
Siris Partners IV, L.P.	2018	89,000,000	-	-	-	-	N/A

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



Through June 30, 2018

	Vintage Year	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
<b>TOTAL PRIVATE REAL ESTATE</b>			4,928,877,109	4,485,578,952	2,946,031,102	3,442,140,614	1.46	8.1%
<b>TOTAL PRIVATE REAL ESTATE</b>								
Colony Realty Partners II	2006	Core Portfolio	20,000,000	24,666,122	8,957,737	-	0.26	-13.3%
JP Morgan Strategic Property Fund	2006	Core Portfolio	136,000,000	243,678,112	92,923,465	295,937,614	1.96	7.2%
PRISA SA	2006	Core Portfolio	86,000,000	92,673,389	31,966,789	118,929,036	1.63	4.7%
Prologis Targeted U.S. Logistics Fund	2006	Core Portfolio	25,000,000	34,039,524	9,942,350	43,530,166	1.57	5.1%
RREEF America REIT II	2006	Core Portfolio	86,000,000	113,537,802	55,692,932	120,998,851	1.56	5.1%
UBS Trumbull Property Fund	2006	Core Portfolio	156,000,000	243,390,768	73,298,882	303,314,184	1.78	6.4%
Heitman HART	2007	Core Portfolio	115,000,000	176,466,897	61,466,897	246,644,755	2.14	8.1%
JP Morgan Special Situation Property Fund	2007	Core Portfolio	90,000,000	140,160,409	70,647,911	126,148,724	1.55	4.7%
PRISA II	2007	Core Portfolio	141,518,761	150,922,667	42,529,640	209,009,596	1.67	5.8%
RREEF America REIT III - 1410	2007	Core Portfolio	90,000,000	90,000,000	51,156,568	-	0.57	-7.5%
LaSalle Property Fund	2010	Core Portfolio	50,000,000	50,000,000	16,638,183	71,174,143	1.76	11.2%
NYC Asset Investor #2 LLC (Related)	2013	Core Portfolio	75,000,000	71,982,093	19,439,062	93,756,365	1.57	15.7%
MetLife Core Property Fund	2014	Core Portfolio	50,000,000	50,000,000	7,691,432	61,929,539	1.39	10.4%
Almanac Realty Securities VII	2015	Core Portfolio	65,000,000	42,296,971	9,535,034	43,073,196	1.22	15.4%
Almanac Realty Securities VII (Sidecar IV)	2015	Core Portfolio	20,000,000	10,063,793	616,677	12,192,151	1.27	20.3%
USAA Eagle Real Estate Fund	2015	Core Portfolio	60,000,000	63,241,106	4,325,590	69,696,498	1.18	8.8%
Brookfield Premier Real Estate Partners	2016	Core Portfolio	91,000,000	95,044,000	4,044,000	107,331,072	1.18	12.5%
Exeter Industrial Core Club Fund II	2016	Core Portfolio	28,000,000	14,784,000	1,451,762	15,819,558	1.16	13.3%
Jamestown Premier Property Fund	2016	Core Portfolio	48,721,196	42,844,093	16,723,116	34,591,789	1.20	10.7%
NYCRS Artemis Co-Investment	2016	Core Portfolio	53,000,000	43,972,521	16,214,491	37,045,686	1.21	29.2%
Carlyle Property Investors	2017	Core Portfolio	91,000,000	92,996,266	1,996,266	95,255,984	1.05	6.5%
Lion Industrial Trust - 2007	2017	Core Portfolio	60,000,000	63,360,507	3,360,507	72,674,206	1.21	14.4%
Heitman Core Real Estate Debt Income Trust	2018	Core Portfolio	45,000,000	-	-	-	N/A	N/A
Canyon-Johnson Urban	2002	Non-Core Portfolio	15,000,000	13,742,215	16,418,450	-	1.20	11.1%
Blackstone Fund IV	2004	Non-Core Portfolio	30,000,000	38,393,533	49,560,712	4,600,935	1.42	10.3%
The City Investment Fund I	2004	Non-Core Portfolio	225,000,000	221,883,300	224,384,800	482,896	1.01	0.3%
Tishman Speyer Citigroup Alt Inv V&VI NYC	2004	Non-Core Portfolio	100,000,000	71,066,452	261,908,690	-	3.72	63.2%
Canyon Johnson Urban Fund II	2005	Non-Core Portfolio	40,000,000	35,954,815	15,898,610	137,816	0.45	-10.5%
AREA Real Estate Investment Fund V, LP	2006	Non-Core Portfolio	25,000,000	25,000,000	16,095,820	9,399,288	1.02	0.3%
American Value Partners Fund I	2007	Non-Core Portfolio	55,000,000	39,320,163	40,907,897	5,499,971	1.18	3.5%
Blackstone Real Estate Partners VI	2007	Non-Core Portfolio	110,000,000	123,415,082	230,988,368	13,971,748	1.99	13.3%
Carlyle Realty Partners V	2007	Non-Core Portfolio	20,000,000	25,710,785	29,522,662	6,564,482	1.59	8.4%
Metropolitan Workforce Housing Fund	2007	Non-Core Portfolio	14,000,000	14,013,027	16,469,642	495,286	1.20	3.8%
Thor Urban Property Fund II	2007	Non-Core Portfolio	40,000,000	54,796,108	54,781,253	17,731,822	1.32	8.3%
UrbanAmerica II	2007	Non-Core Portfolio	25,000,000	23,222,798	2,626,813	-	0.11	-25.0%
Westbrook Real Estate Fund VII	2007	Non-Core Portfolio	40,000,000	43,752,774	40,290,913	12,432,023	1.21	3.3%
AREA European Real Estate Fund III, LP	2008	Non-Core Portfolio	30,000,000	30,487,500	32,677,500	1,949,833	1.14	3.2%
Blackstone Real Estate Partners Europe III	2008	Non-Core Portfolio	50,000,000	51,860,239	64,603,383	15,344,936	1.54	12.2%
Capri Urban Investors	2008	Non-Core Portfolio	60,000,000	60,000,000	27,538,270	17,040,141	0.74	-4.3%
JPM Urban REN PTY FD	2008	Non-Core Portfolio	16,360,625	4,206,523	4,206,523	-	1.00	0.0%
PRISA III	2008	Non-Core Portfolio	50,000,000	109,833,194	49,434,695	151,950,724	2.52	12.3%
Silverpeak Legacy Partners III	2008	Non-Core Portfolio	50,000,000	23,463,317	3,242,529	5,256,765	0.32	-11.9%

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 June 30, 2018

	Vintage Year	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
Stockbridge Real Estate Fund III	2008	Non-Core Portfolio	27,000,000	26,998,145	16,829,753	14,595,552	1.16	2.4%
BlackRock Carbon Capital III Co-Investments	2009	Non-Core Portfolio	40,000,000	43,757,162	53,189,633	-	1.24	8.9%
Walton Street Real Estate Fund VI	2009	Non-Core Portfolio	50,000,000	44,323,933	47,860,267	20,538,519	1.54	9.2%
Westbrook Real Estate Fund VIII	2009	Non-Core Portfolio	50,000,000	59,523,042	67,851,469	10,894,859	1.32	11.8%
Canyon Johnson Urban Fund III	2010	Non-Core Portfolio	30,000,000	29,971,216	40,371,580	36,401	1.34	11.9%
Carlyle Realty Partners VI	2011	Non-Core Portfolio	70,000,000	75,754,634	103,231,881	12,957,510	1.54	21.7%
H/2 Special Opportunities Fund II	2011	Non-Core Portfolio	40,000,000	39,999,999	46,343,790	15,135,843	1.51	14.8%
Blackstone Real Estate Partners VII	2012	Non-Core Portfolio	170,000,000	208,137,392	202,783,860	137,544,429	1.68	18.3%
Brookfield Strategic Real Estate Partners	2012	Non-Core Portfolio	100,000,000	118,076,518	110,279,627	109,738,282	1.95	22.0%
Taconic New York City Investment Fund LP	2012	Non-Core Portfolio	70,000,000	28,954,546	46,945,824	3,259,892	1.73	15.6%
Blackstone Real Estate Partners Europe IV	2013	Non-Core Portfolio	169,000,000	162,889,552	139,019,197	102,470,750	1.49	16.5%
KTR Industrial Fund III	2013	Non-Core Portfolio	40,000,000	18,186,884	28,372,400	-	1.56	40.5%
Lone Star Real Estate Fund III	2013	Non-Core Portfolio	100,000,000	93,741,548	98,332,596	29,452,740	1.33	15.9%
NYC Asset Investor #1 LLC (Vanbarton)	2013	Non-Core Portfolio	50,000,000	55,684,854	13,961,343	56,050,449	1.26	7.7%
NYC Asset Investor #3 LLC (Hudson)	2013	Non-Core Portfolio	50,000,000	30,403,037	5,232,494	34,044,015	1.29	11.6%
Carlyle Realty Partners VII	2014	Non-Core Portfolio	80,000,000	64,657,111	27,338,899	57,175,519	1.35	15.4%
Divco West Fund IV	2014	Non-Core Portfolio	23,000,000	22,334,462	32,028,057	5,077,263	1.66	26.8%
H/2 Special Opportunities Fund III	2014	Non-Core Portfolio	65,000,000	65,000,000	22,756,872	59,368,865	1.25	13.1%
Avanath Affordable Housing Fund II	2015	Non-Core Portfolio	8,000,000	7,873,753	380,651	10,618,957	1.40	12.7%
Blackstone Real Estate Partners VIII	2015	Non-Core Portfolio	151,000,000	100,004,761	35,006,831	91,735,251	1.27	16.9%
European Property Investors Special Opp IV	2015	Non-Core Portfolio	49,178,496	25,740,480	2,163,571	26,975,880	1.14	11.2%
Divco West Fund V	2016	Non-Core Portfolio	60,000,000	21,584,197	43,068	21,902,022	1.02	1.9%
Exeter Industrial Value Fund IV	2016	Non-Core Portfolio	30,000,000	9,000,000	-	9,660,255	1.07	18.2%
H/2 Special Opportunities Fund IV	2016	Non-Core Portfolio	91,000,000	10,632,041	740,287	10,042,052	1.01	1.1%
Pramerica Real Estate Capital VI	2016	Non-Core Portfolio	61,649,200	24,322,419	9,587,388	18,451,658	1.23	21.4%
PW Real Estate Fund III LP	2016	Non-Core Portfolio	46,748,831	22,083,174	3,696,926	27,322,554	1.40	33.7%
Westbrook Real Estate Fund X Co-Investment	2016	Non-Core Portfolio	36,000,000	14,375,083	2,134,737	13,587,402	1.09	10.8%
Basis Investment Group Real Estate Fund I	2017	Non-Core Portfolio	17,000,000	3,835,249	260,851	3,973,989	N/M	N/M
DRA Growth and Income Fund IX	2017	Non-Core Portfolio	49,000,000	19,468,626	4,128,671	18,964,299	1.19	24.5%
DRA Growth and Income Fund IX Co-investment	2017	Non-Core Portfolio	17,000,000	-	-	-	N/A	N/A
NYCRS-KKR CMBS Retention Partners	2017	Non-Core Portfolio	122,000,000	67,350,239	2,981,763	67,005,169	1.04	7.8%
Brookfield Strategic Real Estate Partners III	2018	Non-Core Portfolio	170,000,000	0	-	-	N/A	N/A
KKR Real Estate Partners Americas II	2018	Non-Core Portfolio	118,700,000	10,672,030	-	11,648,459	N/M	N/M

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

# Alternative Assets Manager Performance Detail



Through June 30, 2018

	Vintage Year	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
<b>TOTAL INFRASTRUCTURE</b>		893,804,908	383,587,647	64,801,821	408,009,813	1.23	13.1%
<b>TOTAL INFRASTRUCTURE INVESTMENTS</b>							
Brookfield Infrastructure Fund II, L.P.	2013	75,000,000	59,949,439	13,294,173	70,959,638	1.41	12.8%
KKR Global Infrastructure Investors II L.P.	2014	77,000,000	67,098,041	6,609,798	69,509,483	1.13	10.2%
IFM Global Infrastructure Fund	2014	75,000,000	90,942,097	15,942,097	105,957,598	1.34	11.7%
Global Energy & Power Infrastructure Fund II	2014	45,000,000	32,414,426	20,688,643	25,265,891	1.42	43.9%
Global Infrastructure Partners III-A/B, L.P.	2016	106,000,000	58,586,006	1,511,172	58,836,055	103.0%	3.7%
Brookfield Infrastructure Fund III, L.P.	2016	91,000,000	19,692,061	2,073,013	21,302,368	118.7%	11.7%
Actis Energy 4	2016	64,300,000	19,055,674	3,346	19,076,000	NM	NM
NYCRS EIG Energy Partners, L.P.	2017	65,880,000	3,163,545	68,754	3,195,482	NM	NM
EQT Infrastructure III (No.2) SCSp	2017	56,971,704	26,873,796	2,337,792	29,391,900	NM	NM
Axiom Infrastructure North America	2017	67,683,204	1,309,033	-	1,078,906	NM	NM
ASF VII Infrastructure L.P.	2017	66,000,000	4,503,530	2,273,032	3,436,492	NM	NM
NYCRS EIG Energy Partners Co-Investment, L.P.	2018	16,470,000	-	-	-	NM	NM
KKR Global Infrastructure Investors III L.P.	2018	87,500,000	-	-	-	NM	NM

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

# Alternative Assets Manager Performance Detail



Through September 30, 2018

	Vintage Year	Commitment - Closing (Base)	Contributions Cumulative (Local)	Distributions Cumulative	Final Market Value	3 Month Base%	Inception IRR%
<b>TOTAL OPPORTUNISTIC FIXED INCOME</b>		2,633,420,731	2,446,293,976	1,255,727,802.45	1,857,787,340	1.64%	7.86%
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	31,938,265	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	5,113,327.00	0.00%	1.47%
GoldenTree Managed Account	2011	140,000,000	131,253,192	-	201,602,255.56	1.32%	7.22%
Marathon Centre Street Partnership, L.P.	2011	218,750,000	271,250,000	82,250,000.00	292,686,092.07	2.60%	7.48%
AG Centre Street Partnership, L.P.	2012	180,000,000	153,000,000	47,626,130.00	158,335,896.00	4.32%	6.68%
Apollo Centre Street Partnership, L.P.	2012	268,750,000	329,468,982	184,192,073.00	195,119,180.63	1.94%	4.90%
FCO MA Centre Street L.P.	2012	140,000,000	248,638,905	143,623,310.56	155,587,024.61	0.00%	8.74%
OHA Centre Street Partnership, L.P.	2012	175,000,000	213,384,986	63,133,891.42	222,845,130.37	2.48%	8.26%
Contrarian Centre Street Partnership, L.P.	2013	90,000,000	90,000,000	-	109,747,724.43	-0.22%	5.69%
Lone Star Fund VIII (U.S.), L.P.	2013	100,000,000	98,438,980	91,740,448.64	31,575,007.37	0.00%	14.20%
Oaktree Opportunities Fund IX, L.P.	2013	100,000,000	100,000,000	32,895,430.47	80,735,855.00	0.76%	3.21%
Ares Centre Street Partnership, L.P.	2014	140,000,000	128,117,072	-	170,382,456.26	1.48%	9.70%
Brightwood Capital Fund III, L.P.	2015	35,000,000	28,403,806	8,656,939.60	24,011,104.99	0.00%	5.14%
Torchlight Debt Opportunity Fund V, LP	2015	67,000,000	40,200,000	3,709,868.00	47,666,037.00	2.56%	15.11%
Brightwood Capital Fund IV, LP	2016	87,500,000	26,250,000	2,465,611.00	26,199,371.00	0.00%	9.67%
ICG Centre Street Partnership, L.P.	2017	120,000,000	96,603,605	57,879,746.80	41,954,857.95	0.00%	5.47%
KKR OFI SMA	2017	272,000,000	71,400,000	8,500,000.00	70,075,752.13	0.00%	19.81%
Maranon Centre Street Partnership, L.P.	2018	103,000,000	24,150,268	-	24,150,267.52		0.00%

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

# Alternative Assets Manager Performance Detail



Through September 30, 2018

	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>	37,649,475	-1.62%	-0.27%	-0.27%	4.30%	4.65%	3.02%	3.23%	25.95%
<b>TOTAL DIRECT HEDGE FUNDS</b>	37,649,475	-1.62%	-0.27%	-0.27%	4.30%	4.65%	3.31%	4.33%	33.14%
<b>FUND OF FUNDS HEDGE FUNDS</b>	-	0.00%		0.00%	0.00%		0.50%	1.83%	12.03%
<b>TOTAL DIRECT HEDGE FUNDS</b>									
Brevan Howard L.P.	29,019,216	0.13%	1.94%	1.94%	10.13%	9.64%	2.59%	2.13%	15.10%
Tactical Trading	29,019,216	0.13%	1.94%	1.94%	10.13%	9.64%	3.27%	2.36%	16.85%
Luxor Capital Partners Liquidating SPV, LLC.	2,456,242	-1.61%	-1.37%	-1.37%	-1.77%	-1.71%		11.55%	27.88%
Perry Partners L.P.	6,174,016	-9.11%	-9.11%	-9.11%	-18.23%	-13.96%	-5.49%	-4.35%	-21.12%
Event Driven	8,630,258	-7.10%	-7.04%	-7.04%	-15.46%	-13.46%	-1.72%	-0.78%	-4.37%
<b>FUND OF FUNDS HEDGE FUNDS</b>									
Fund of Funds Hedge Funds	-	0.00%		0.00%	0.00%		0.50%	1.83%	12.03%

Information provided by Alpha Frontier



---

**New York City  
Employees' Retirement System**

# Appendix D

## Footnotes



Through September 30, 2018

- 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%.



Through September 30, 2018

## General Notes

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

## Page Specific

### Pages 8 - 13 - Portfolio Asset Allocation

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

### Pages 14 -16 - Performance Attribution: Total Plan

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



Through September 30, 2018

*The indexes and most recent policy weights are as follows:*

*U.S. Equity: Russell 3000 \* 31.14%*

*International Developed (EAFE) Markets: MSCI World ex USA IMI\* 12.55%*

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

*Emerging Markets: MSCI Custom ERS Emerging Markets (Net)\* 6.97%*

*International Emerging Managers FOF: NYC Blended Custom Benchmark for FoF\* 0.63%*

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

*Private Equity: Russell 3000 + 300 b.p. per annum \* 6.91%*

*Private Real Estate – Core: NFI - ODCE Net \* 3.30%*

*Private Real Estate – Non Core: NFI - ODCE Net + 200bps \* 1.91%*

*Infrastructure: CPI + 4% \* 0.68%*

*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 \* 0.00%*

*Active Government: NYC Treasury Agency + 5 \* 10.66%*

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

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

*Mortgage: FTSE Mortgage Index \* 3.57%*

*ETI: ETI Custom Benchmark \* 1.24%*

*Investment Grade Credit: NYC – Investment Grade Credit \* 4.81%*





Through September 30, 2018

---

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

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

*TIPS: BBG BARC Gbl Inf-Lk: US TIPS \* 4.33%*

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

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

**Page 17 – Allocation and Selection Effects - Asset Class Breakdown**

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

ETI Quarterly Report (Public):

# NYCERS Pension Fund - Economically Targeted Investments Quarterly Report

## Public/Private Apartment Rehabilitation Program (PPAR)

Lenders*	BOA		CCD		CFSB		CPC		JPM		LIIF		NCBCI		NHS		WF		LISC		BE		HDC	
Contractual Commitment <sup>1</sup>	\$80.00		\$40.00		\$10.00		\$290.00		\$145.00		\$25.00		\$17.00		\$3.00		\$70.00		\$12.00		\$12.00		\$20.00	
Current Market Value <sup>1</sup>	\$36.46		\$18.06		\$2.48		\$166.61		\$98.99		\$12.28		\$1.95		\$0.66		\$4.71		\$0.00		\$0.00		\$0.00	
	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units
<b>Commitments Q3</b> <b>(included in total)</b>																								
Bronx	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0
Brooklyn	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Manhattan	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Queens	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Staten Island	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Outside of NYC	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
<b>Total</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>
<b>Delivered Q3</b> <b>(included in total)</b>																								
Bronx	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0
Brooklyn	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Manhattan	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Queens	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Staten Island	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	1.26	67	0.00	0	0.00	0	0.00	0
Outside of NYC	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
<b>Total</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$1.26</b>	<b>67</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>
<b>Total Commitments</b>																								
Bronx	\$0.00	0	\$5.32	223	\$0.00	0	\$34.75	1,266	\$17.48	391	\$1.55	61	\$0.00	0	\$0.00	0	\$3.94	90	\$1.27	48	\$0.00	0	\$0.00	0
Brooklyn	6.64	288	6.02	179	0.00	0	15.12	776	2.63	89	1.68	121	0.00	0	0.00	0	8.70	130	2.80	156	2.48	359	0.00	0
Manhattan	0.00	0	0.00	0	0.51	39	14.65	502	1.19	54	2.72	174	0.00	0	0.00	0	13.58	103	5.06	155	2.39	83	0.00	0
Queens	0.00	0	0.00	0	0.00	0	4.82	307	5.26	68	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Staten Island	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Outside of NYC	0.00	0	2.11	41	0.00	0	2.22	78	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
<b>Total</b>	<b>\$6.64</b>	<b>288</b>	<b>\$13.45</b>	<b>443</b>	<b>\$0.51</b>	<b>39</b>	<b>\$71.56</b>	<b>2,929</b>	<b>\$26.57</b>	<b>602</b>	<b>\$5.94</b>	<b>356</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$26.23</b>	<b>323</b>	<b>\$9.13</b>	<b>359</b>	<b>\$4.87</b>	<b>442</b>	<b>\$0.00</b>	<b>0</b>
<b>Historical Investments</b>																								
Bronx	\$18.31	1,276	\$8.94	579	\$0.00	0	\$117.94	7,462	\$78.02	2,586	\$1.51	117	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0
Brooklyn	6.92	142	4.83	302	0.00	0	127.81	5,065	26.07	747	5.19	375	0.00	0	0.66	7	0.00	0	0.00	0	0.00	0	0.00	0
Manhattan	7.24	148	3.70	283	3.22	197	94.81	4,980	52.12	1,641	7.11	407	1.98	123	0.50	15	3.31	100	0.00	0	0.00	0	0.00	0
Queens	15.17	293	0.80	54	0.00	0	21.10	815	16.09	687	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Staten Island	0.00	0	0.00	0	0.00	0	0.26	8	1.28	35	0.00	0	0.00	0	0.00	0	1.26	67	0.00	0	0.00	0	0.00	0
Outside of NYC	1.61	39	0.00	0	0.00	0	16.11	449	5.55	123	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
<b>Total</b>	<b>\$49.25</b>	<b>1,898</b>	<b>\$18.28</b>	<b>1,218</b>	<b>\$3.22</b>	<b>197</b>	<b>\$378.03</b>	<b>18,779</b>	<b>\$179.13</b>	<b>5,819</b>	<b>\$13.81</b>	<b>899</b>	<b>\$1.98</b>	<b>123</b>	<b>\$1.17</b>	<b>22</b>	<b>\$4.57</b>	<b>167</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>

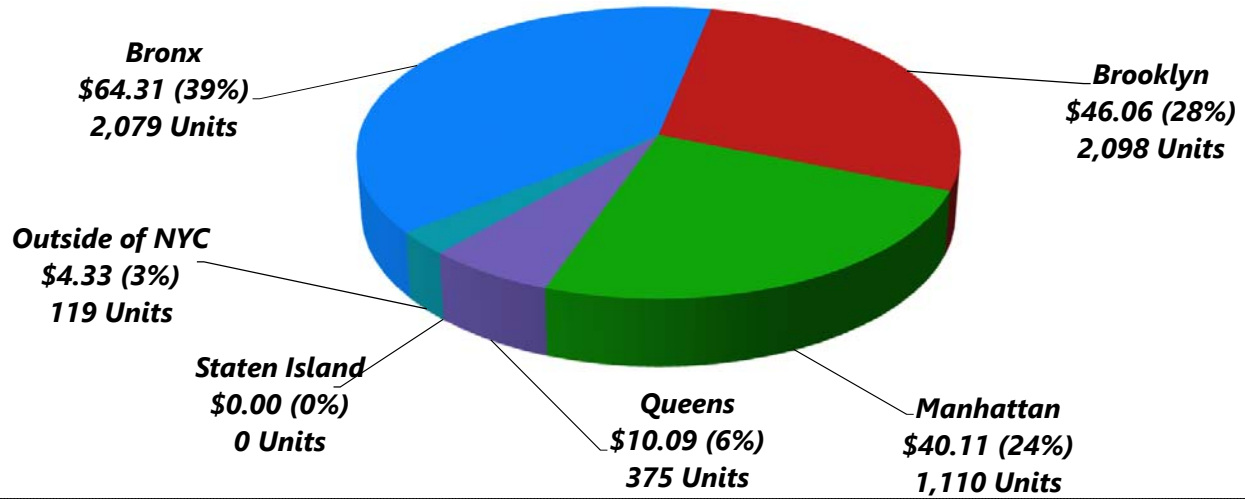
\*Lenders : Bank of America    Citi Community Development    Carver Federal Savings Bank    The Community Preservation Corp    JP Morgan Chase    Low Income Investment Fund    NCB Capital Impact    Neighborhood Housing Service    Wells Fargo    Local Initiatives Support Corp    Bellwether Enterprise    NYC HDC

<sup>1</sup> Dollar amount listed in millions

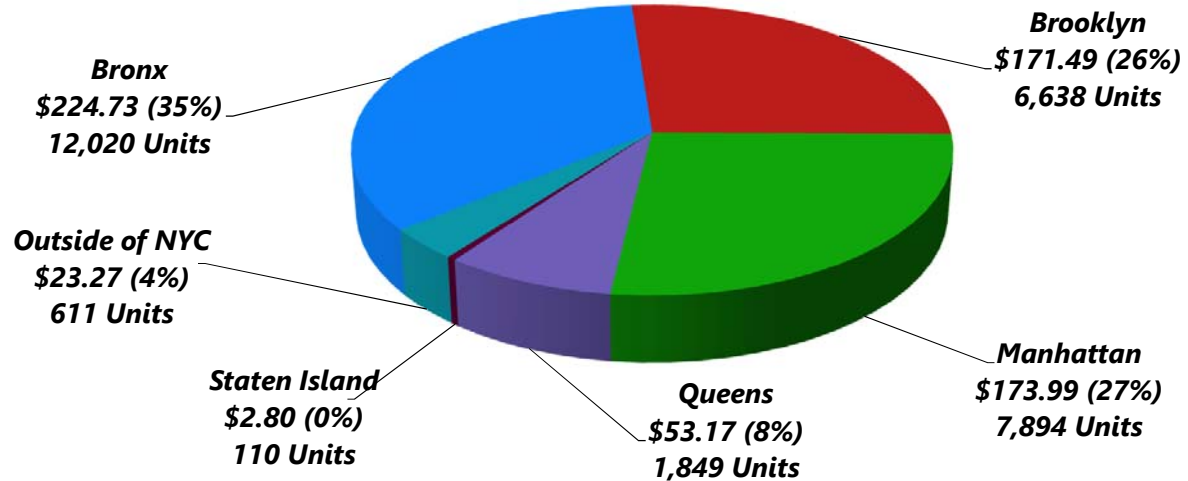
# NYCERS Pension Fund - Economically Targeted Investments Quarterly Report

## Public/Private Apartment Rehabilitation Program (PPAR)

**Current Commitments All PPAR Lenders**



**Historical Investments Since Inception All PPAR Lenders**



Lenders*	All Lender Totals	
Contractual Commitment <sup>1</sup>	\$724.00	
Current Market Value <sup>1</sup>	\$342.19	
	Dollars	Units
<b>Commitments Q3</b> (included in total)		
Bronx	\$0.00	0
Brooklyn	0.00	0
Manhattan	0.00	0
Queens	0.00	0
Staten Island	0.00	0
Outside of NYC	0.00	0
<b>Total</b>	\$0.00	0
<b>Delivered Q3</b> (included in total)		
Bronx	\$0.00	0
Brooklyn	0.00	0
Manhattan	0.00	0
Queens	0.00	0
Staten Island	1.26	67
Outside of NYC	0.00	0
<b>Total</b>	\$1.26	67
<b>Total Commitments</b>		
Bronx	\$64.31	2,079
Brooklyn	46.06	2,098
Manhattan	40.11	1,110
Queens	10.09	375
Staten Island	0.00	0
Outside of NYC	4.33	119
<b>Total</b>	\$164.90	5,781
<b>Historical Investments</b>		
Bronx	\$224.73	12,020
Brooklyn	171.49	6,638
Manhattan	173.99	7,894
Queens	53.17	1,849
Staten Island	2.80	110
Outside of NYC	23.27	611
<b>Total</b>	\$649.44	29,122

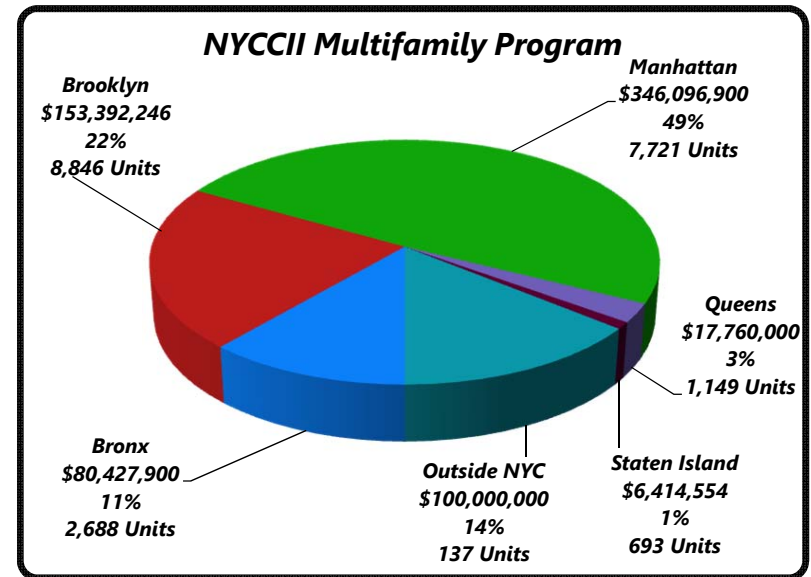
<sup>1</sup> Dollar amount listed in millions

# NYCERS Pension Fund - Economically Targeted Investments Quarterly Report

**AFL-CIO Housing Investment Trust (HIT)**  
Market Value \$303.16 million<sup>1</sup>

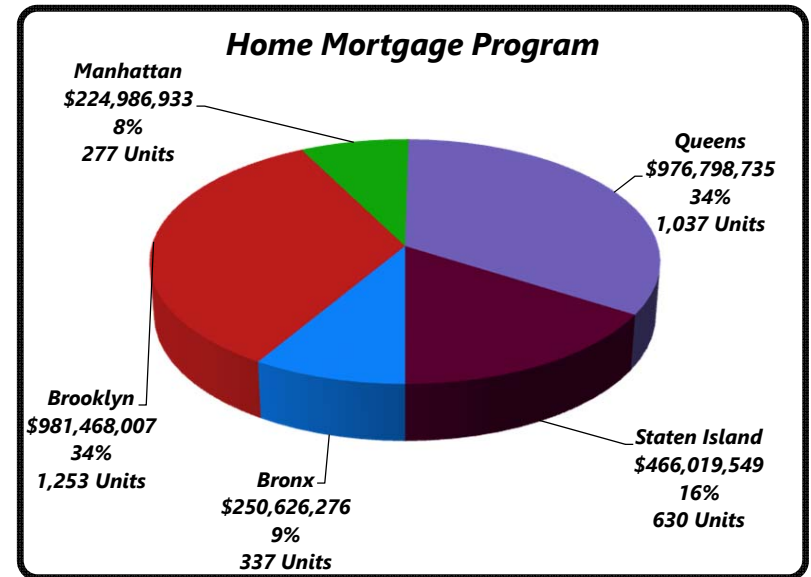
## NYC Community Investment Initiative (NYCCII)

Borough	NYCCII Phase I: 2002 - 2005		NYCCII Phase II: 2006 - 2013		Grand Total	
	Investments	Units <sup>2</sup>	Investments	Units <sup>2</sup>	Investments	Units <sup>2</sup>
Bronx	\$27,600,000	1,886	\$52,827,900	802	\$80,427,900	2,688
Brooklyn	49,501,800	3,230	103,890,446	5,616	153,392,246	8,846
Manhattan	172,021,700	6,908	174,075,200	813	346,096,900	7,721
Queens	0	0	17,760,000	1,149	17,760,000	1,149
Staten Island	0	0	6,414,554	693	6,414,554	693
Outside NYC	0	0	100,000,000	137	100,000,000	137
<b>Total</b>	<b>\$249,123,500</b>	<b>12,024</b>	<b>\$454,968,100</b>	<b>9,210</b>	<b>\$704,091,600</b>	<b>21,234</b>



## HIT Home Mortgage Program

Borough	NYCCII Phase I: 2002 - 2005		NYCCII Phase II: 2006 - 2013		Grand Total	
	\$ Amount	Loans	\$ Amount	Loans	\$ Amount	Loans
Bronx	\$32,544,168	41	\$218,082,108	296	\$250,626,276	337
Brooklyn	116,575,736	138	864,892,271	1,115	981,468,007	1,253
Manhattan	10,742,253	12	214,244,680	265	224,986,933	277
Queens	82,399,317	64	894,399,418	973	976,798,735	1,037
Staten Island	106,039,089	191	359,980,460	439	466,019,549	630
<b>Total</b>	<b>\$348,300,563</b>	<b>446</b>	<b>\$2,551,598,937</b>	<b>3,088</b>	<b>\$2,899,899,500</b>	<b>3,534</b>

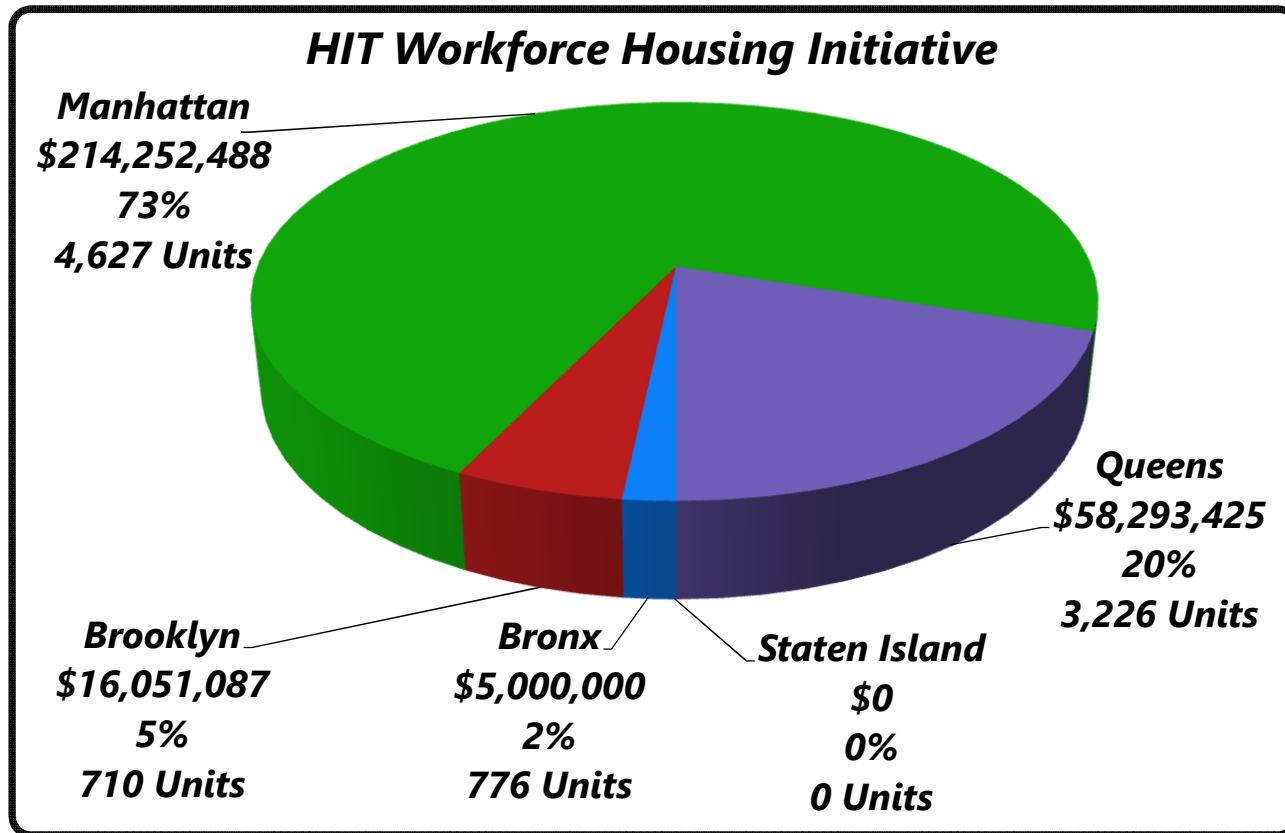


NYCERS Loans	Phase I:	134	Phase II:	780	Total:	914
--------------	----------	-----	-----------	-----	--------	-----

<sup>1</sup>Interest is reinvested  
<sup>2</sup>Low/Moderate Income Units

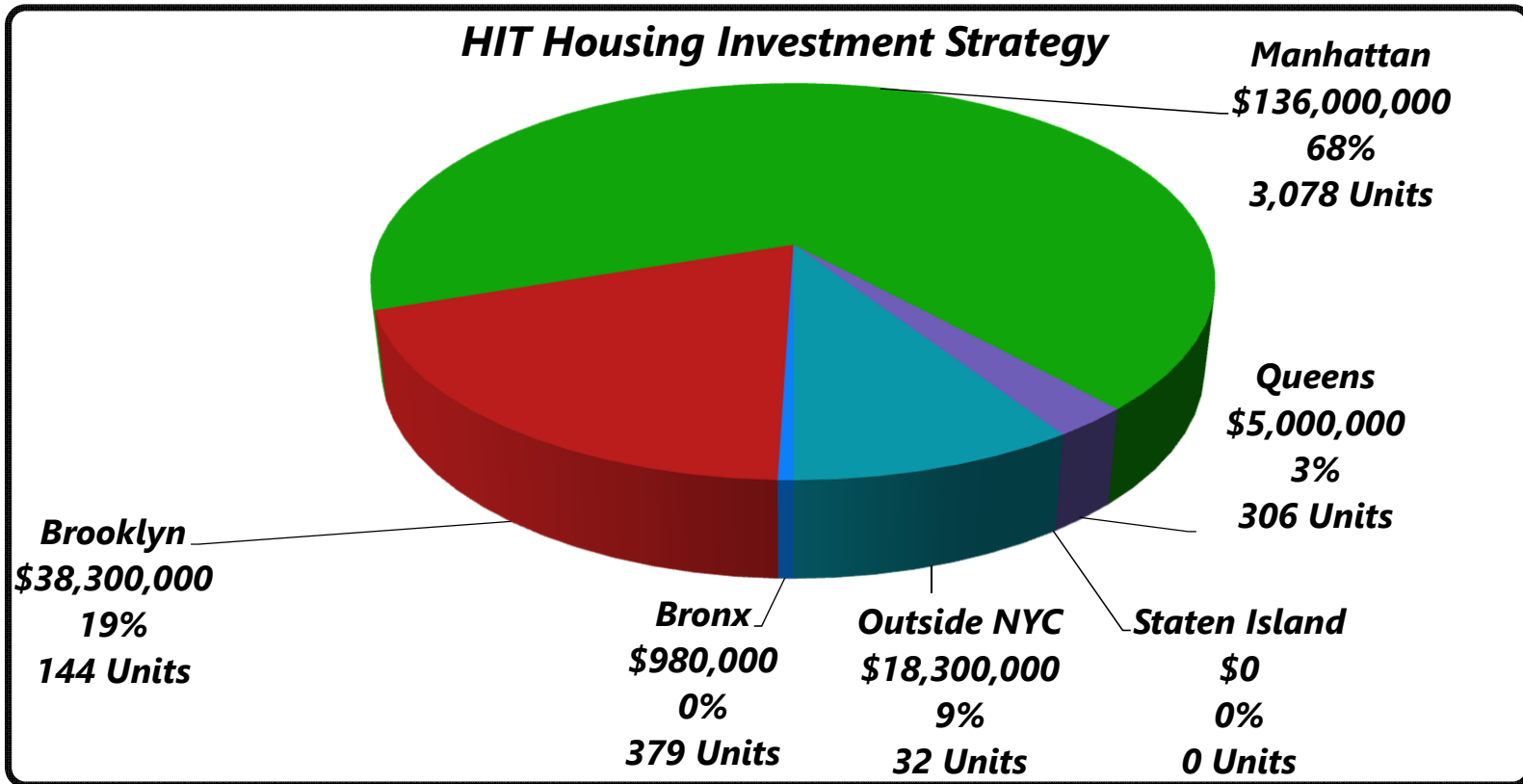
# NYCERS Pension Fund - Economically Targeted Investments Quarterly Report

AFL-CIO Housing Investment Trust (HIT) NYC Workforce Housing Initiative: 2009 - 2015		
<u>Borough</u>	<u>Investments</u>	<u>LMI Units</u>
	<u>Since Inception</u>	<u>Since Inception</u>
Bronx	\$5,000,000	776
Brooklyn	16,051,087	710
Manhattan	214,252,488	4,627
Queens	58,293,425	3,226
Staten Island	0	0
<b>Total</b>	<b>\$293,597,000</b>	<b>9,339</b>



# NYCERS Pension Fund - Economically Targeted Investments Quarterly Report

AFL-CIO Housing Investment Trust (HIT)					
HIT Housing Investment Strategy: 2015 - Q3 2018					
<u>Borough</u>	<u>Q3 Investments</u>	<u>Investments</u>		<u>LMI Units</u>	
		<u>Since Inception</u>	<u>Q3 LMI Units</u>	<u>Since Inception</u>	
Bronx	\$0	\$980,000	0	379	
Brooklyn	0	38,300,000	0	144	
Manhattan	0	136,000,000	0	3,078	
Queens	0	5,000,000	0	306	
Staten Island	0	0	0	0	
Outside NYC	0	18,300,000	0	32	
<b>Total</b>	<b>\$0</b>	<b>\$198,580,000</b>	<b>0</b>	<b>3,939</b>	



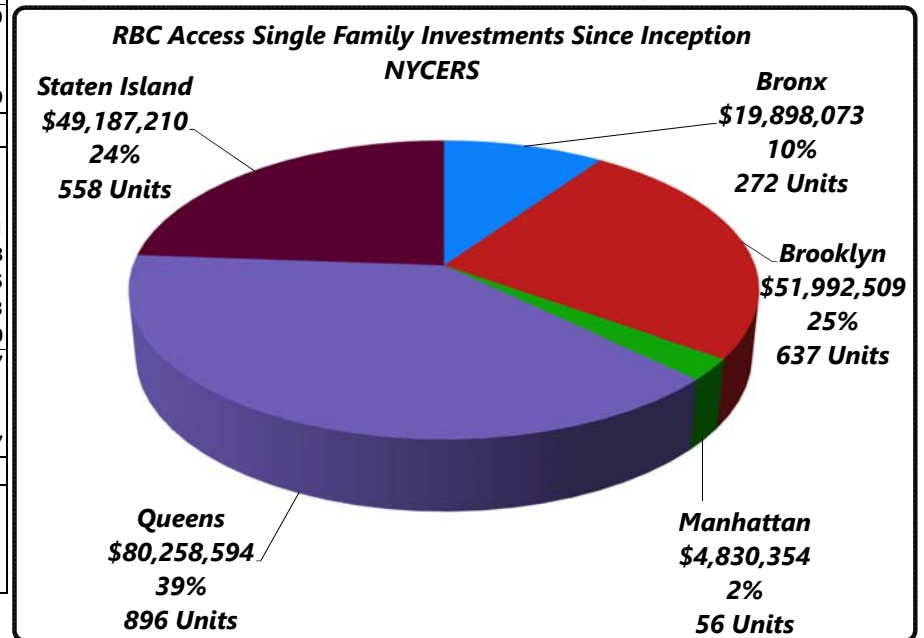
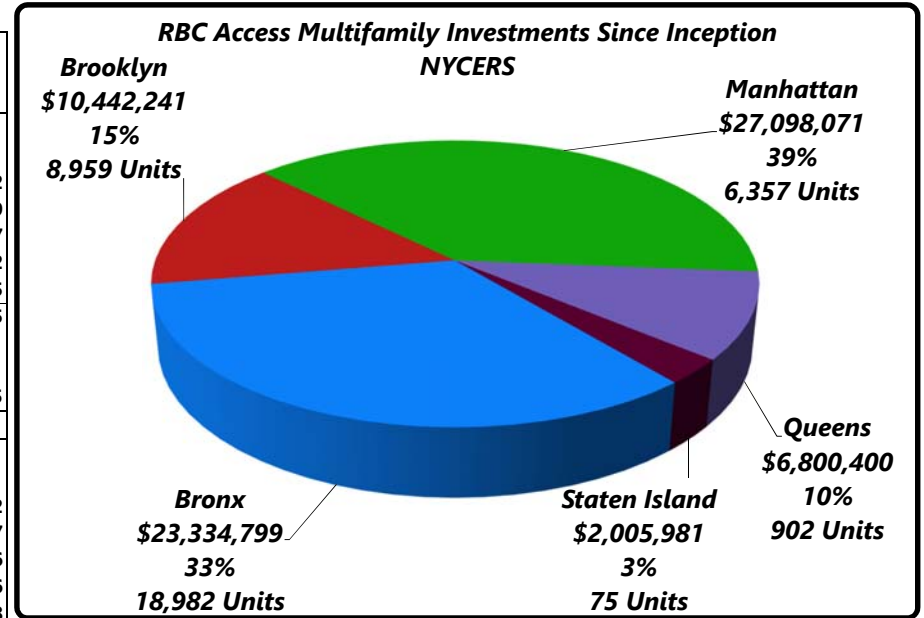
# NYCERS Pension Fund - Economically Targeted Investments Quarterly Report

RBC ACCESS CAPITAL STRATEGIES (Since Inception 2/1/07)

\$162 million Allocated (36% of total account)					
Market Value \$156.45 million					
<b>Multifamily Investments Detail</b>					
		<b>\$ Invested<sup>1</sup></b>		<b>Units<sup>2</sup></b>	
	<b>Q3</b>	<b>Total</b>	<b>Q3</b>	<b>Total</b>	
Bronx	\$0	\$23,334,799	0	18,982	
Brooklyn	0	10,442,241	0	8,959	
Manhattan	0	27,098,071	0	6,357	
Queens	0	6,800,400	0	902	
Staten Island	0	2,005,981	0	75	
<b>Total NYCERS Multifamily Investments</b>	<b>\$0</b>	<b>\$69,681,493</b>	<b>0</b>	<b>35,275</b>	
<b>Multifamily Total All Systems</b>					
	<b>\$0</b>	<b>\$193,559,702</b>	<b>0</b>	<b>35,275</b>	
<b>Single Family Investments Detail</b>					
		<b>\$ Invested</b>		<b>Units</b>	
	<b>Q3</b>	<b>Total</b>	<b>Q3</b>	<b>Total</b>	
Bronx	\$0	\$19,898,073	0	272	
Brooklyn	0	51,992,509	0	637	
Manhattan	0	4,830,354	0	56	
Queens	0	80,258,594	0	896	
Staten Island	0	49,187,210	0	558	
<b>Total NYCERS Single Family Investments</b>	<b>\$0</b>	<b>\$206,166,741</b>	<b>0</b>	<b>2,419</b>	
<b>Single Family Total All Systems</b>					
	<b>\$0</b>	<b>\$572,685,390</b>	<b>0</b>	<b>2,419</b>	
<b>Other Investments Detail</b>					
		<b>\$ Invested</b>		<b>Loans</b>	
	<b>Q3</b>	<b>Total</b>	<b>Q3</b>	<b>Total</b>	
Bronx	\$0	\$243,000	0	1	
Brooklyn	0	1,940,545	0	8	
Manhattan	0	875,846	0	5	
Queens	0	195,636	0	3	
Staten Island	0	0	0	0	
<b>Total NYCERS Other Investments</b>	<b>\$0</b>	<b>\$3,255,026</b>	<b>0</b>	<b>17</b>	
<b>Other Investments Total All Systems</b>					
	<b>\$0</b>	<b>\$9,041,740</b>	<b>0</b>	<b>17</b>	
<b>Grand Total NYCERS</b>					
	<b>\$0</b>	<b>\$279,103,260</b>			
<b>Grand Total All Systems</b>					
	<b>\$0</b>	<b>\$775,286,832</b>			

<sup>1</sup> Certain bond investment amounts are allocated pro rata across boroughs based upon unit count.

<sup>2</sup> If not indicated otherwise, superintendent units are allocated based on building size.





Private Equity Quarterly Report (Public):



## Private Equity Monitoring Report

For the period ended June 30, 2018

Report Prepared For:

New York City Employees' Retirement System



## Table of Contents

I. Executive Summary.....	1
Performance Summary .....	1
Portfolio Performance vs. Benchmarks.....	2
Portfolio Diversification .....	2
By Strategy.....	2
By Fund Geographic Focus .....	2
II. Market Overview .....	3
Executive Summary.....	3
Capital Markets Overview .....	4
Public Equity Markets.....	4
Debt Markets .....	5
Private Equity Market Overview .....	6
All Private Equity .....	6
Fundraising .....	6
Investment Activity.....	7
Deal Environment.....	8
III. Portfolio Review.....	9
Quarterly Highlights .....	9
Investment Performance .....	10
Since Inception Performance .....	10
Performance by Vintage Year .....	11
Portfolio Periodic Returns vs. Russell 3000® Index .....	12
Performance by Strategy / Sub-Strategy .....	12
Performance by Strategy .....	13
Performance by Sub-Strategy.....	13
Portfolio Diversification .....	14
By Strategy/Sub-Strategy .....	14
By Fund Geographic Focus .....	14
By Investment Manager .....	16
Portfolio Cash Flow Analysis .....	17
Year to Date Cash Flow Activity.....	17
Quarterly Cash Flow Activity .....	18
Invested Capital by Vintage Year .....	19
Portfolio Company-Level Analysis.....	20
Geographic Exposure.....	20
Public Market Exposure.....	22
IV. Appendix.....	23
Private Equity Portfolio .....	24
Subsequent Commitments.....	27

## Important Information

This document is meant only to provide a broad overview for discussion purposes. All information provided here is subject to change. This document is for informational purposes only and does not constitute an offer to sell, a solicitation to buy, or a recommendation for any security, or as an offer to provide advisory or other services by StepStone Group LP, StepStone Group Real Assets LP, StepStone Group Real Estate LP, Swiss Capital Invest Holding (Dublin) Ltd, Swiss Capital Alternative Investments AG or their subsidiaries or affiliates (collectively, "StepStone") in any jurisdiction in which such offer, solicitation, purchase or sale would be unlawful under the securities laws of such jurisdiction. The information contained in this document should not be construed as financial or investment advice on any subject matter. StepStone expressly disclaims all liability in respect to actions taken based on any or all of the information in this document.

This document is confidential and solely for the use of StepStone and the existing and potential clients of StepStone to whom it has been delivered, where permitted. By accepting delivery of this presentation, each recipient undertakes not to reproduce or distribute this presentation in whole or in part, nor to disclose any of its contents (except to its professional advisors), without the prior written consent of StepStone. While some information used in the presentation has been obtained from various published and unpublished sources considered to be reliable, StepStone does not guarantee its accuracy or completeness and accepts no liability for any direct or consequential losses arising from its use. Thus, all such information is subject to independent verification by prospective investors.

The presentation is being made based on the understanding that each recipient has sufficient knowledge and experience to evaluate the merits and risks of investing in private market products. All expressions of opinion are intended solely as general market commentary and do not constitute investment advice or a guarantee of returns. All expressions of opinion are as of the date of this document, are subject to change without notice and may differ from views held by other businesses of StepStone.

All valuations are based on current values calculated in accordance with StepStone's Valuation Policies and may include both realized and unrealized investments. Due to the inherent uncertainty of valuation, the stated value may differ significantly from the value that would have been used had a ready market existed for all of the portfolio investments, and the difference could be material. The long-term value of these investments may be lesser or greater than the valuations provided.

StepStone Group LP, its affiliates and employees are not in the business of providing tax, legal or accounting advice. Any tax-related statements contained in these materials are provided for illustration purposes only and cannot be relied upon for the purpose of avoiding tax penalties. Any taxpayer should seek advice based on the taxpayer's particular circumstances from an independent tax advisor.

Prospective investors should inform themselves and take appropriate advice as to any applicable legal requirements and any applicable taxation and exchange control regulations in the countries of their citizenship, residence or domicile which might be relevant to the subscription, purchase, holding, exchange, redemption or disposal of any investments. Each prospective investor is urged to discuss any prospective investment with its legal, tax and regulatory advisors in order to make an independent determination of the suitability and consequences of such an investment.

An investment involves a number of risks and there are conflicts of interest. Please refer to the risks and conflicts disclosed herein.

Each of StepStone Group LP, StepStone Group Real Assets LP and StepStone Group Real Estate LP is an investment adviser registered with the Securities and Exchange Commission ("SEC"). StepStone Group Europe LLP is authorized and regulated by the Financial Conduct Authority, firm reference number 551580. Swiss Capital Invest Holding (Dublin) Ltd ("SCHIDL") is an SEC Registered Investment Advisor and Swiss Capital Alternative Investments AG ("SCAI") (together with SCHIDL, "Swiss Cap") is registered as a Relying Advisor with the SEC. Such registrations do not imply a certain level of skill or training and no inference to the contrary should be made.

All data is as of June 30, 2018 unless otherwise noted.

**PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. ACTUAL PERFORMANCE MAY VARY.**

## I. Executive Summary

The New York City Employees' Retirement System ("NYCERS") established the Alternative Investment Program (the "Program") on January 1, 1997 on behalf of its beneficiaries to participate in attractive long-term investment opportunities and to provide diversification to its overall pension investment portfolio.

StepStone Group LP ("StepStone") was engaged by NYCERS on September 1, 2011 to provide private equity advisory services for prospective investment opportunities and monitoring and reporting services for existing and new investments.

Since inception through June 30, 2018, the Program has committed US\$10.4 billion to 204 partnership investments (the "Portfolio"). This quarterly monitoring report covers the performance of the Portfolio as of June 30, 2018 as well as significant activity that occurred during the second quarter of 2018.

### Performance Summary

<i>US\$ in millions</i>	June 30, 2018	March 31, 2018	June 30, 2017	Quarterly Change	Yearly Change
Number of Managers	110	110	108	-	2
Number of Investments	204	199	188	5	16
Committed Capital <sup>1</sup>	\$10,376.1	\$10,216.5	\$9,469.3	\$159.6	\$906.8
Contributed Capital	\$8,718.7	\$8,615.5	\$7,934.9	\$103.2	\$783.7
Distributed Capital	\$7,914.3	\$7,683.7	\$6,763.7	\$230.7	\$1,150.6
Market Value	\$4,664.8	\$4,600.0	\$4,405.4	\$64.9	\$259.5
Total Value	\$12,579.1	\$12,283.6	\$11,169.1	\$295.5	\$1,410.1
Total Gain/(Loss)	\$3,860.5	\$3,668.1	\$3,234.1	\$192.4	\$626.3
Unfunded Commitment <sup>2</sup>	\$2,805.5	\$2,736.7	\$2,603.4	\$68.8	\$202.1
Total Exposure <sup>3</sup>	\$7,470.3	\$7,336.6	\$7,008.8	\$133.7	\$461.6
DPI <sup>4</sup>	0.91x	0.89x	0.85x	0.02x	0.06x
TVM <sup>5</sup>	1.44x	1.43x	1.41x	0.02x	0.04x
IRR <sup>6</sup>	9.9%	9.8%	9.5%	+ 14 bps	+ 36 bps
TVM Net of StepStone Fees <sup>7</sup>	1.44x	1.42x	1.41x	0.02x	0.04x
IRR Net of StepStone Fees <sup>7</sup>	9.9%	9.7%	9.5%	+ 14 bps	+ 36 bps

<sup>1</sup> Committed Capital is presented net of any commitment releases or expirations and reflects foreign currency exchange rate fluctuations.

<sup>2</sup> Unfunded Commitment represents the aggregate remaining commitments to partnership investments.

<sup>3</sup> Total Exposure represents the sum of Market Value and Unfunded Commitment.

<sup>4</sup> DPI, or Distributed to Paid-In Multiple, is a performance metric that measures distributions received relative to capital invested. DPI is calculated as Distributed Capital divided by Contributed Capital.

<sup>5</sup> TVM, or Total Value Multiple, is a performance metric that measures total value created by the Portfolio relative to capital invested, without consideration for time. TVM is calculated as Total Value, which is comprised of Market Value plus Distributed Capital, divided by Contributed Capital.

<sup>6</sup> IRR, or Internal Rate of Return, is a performance metric that is calculated based on the Portfolio's daily cash flows and market value as of quarter-end. IRR is net of fund manager's fees, expenses and carried interest.

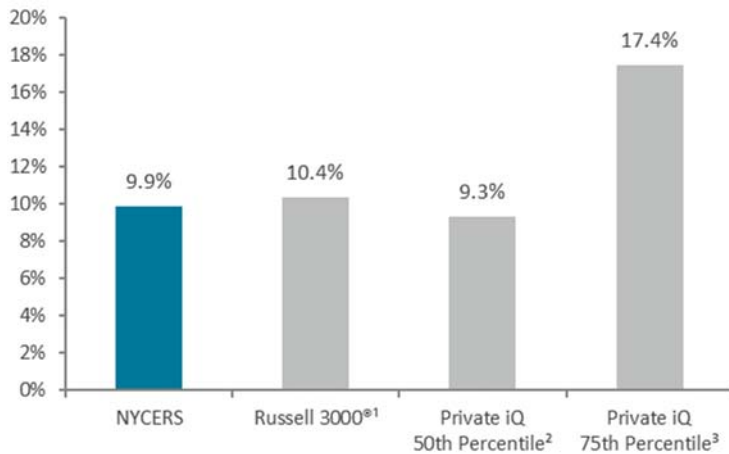
<sup>7</sup> TVM and IRR Net of StepStone fees represent TVM and IRR net of fees paid by NYCERS to StepStone.

Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve comparable results or avoid substantial losses.

## Portfolio Performance vs. Benchmarks

The Portfolio's performance is measured against a dollar-weighted public benchmark, which produced the return that would have been earned if NYCERS's private equity cash flows were invested in the Russell 3000® Index<sup>1</sup>.

The following graph illustrates Portfolio IRR performance versus benchmarks as of June 30, 2018.



<sup>1</sup>Benchmark is a dollar-weighted PME+ calculation of daily changes in the Russell 3000® Index. Russell Investment Group is the source and owner of the trademark, service marks and copyrights related to the Russell Indexes. Russell® is a trademark of Russell Investment Group.

<sup>2</sup>Private iQ benchmark reflects Equity (all sub-sectors), Mezzanine, Distressed, Oil & Gas Assets asset classes, 50th percentile, or median, IRR at June 30, 2018 for funds with vintage years from 1998 through 2018. Note: Data may be subject to change.

<sup>3</sup>Private iQ benchmark reflects Equity (all sub-sectors), Mezzanine, Distressed, Oil & Gas Assets asset classes, 50th percentile, or median, IRR at June 30, 2018 for funds with vintage years from 1998 through 2018. Note: Data may be subject to change.

The referenced indices are shown for general market comparisons and are not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented.

## Portfolio Diversification

### By Strategy

As of June 30, 2018 (US\$ in millions)	Market Value		Unfunded Commitment		Total Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
Buyout	\$2,964.9	63.6%	\$1,878.2	66.9%	\$4,843.1	64.8%
Growth Equity	389.6	8.4%	240.7	8.6%	630.3	8.4%
Special Situations	472.3	10.1%	254.3	9.1%	726.6	9.7%
Energy	110.6	2.4%	12.9	0.5%	123.5	1.7%
Secondaries	269.0	5.8%	215.2	7.7%	484.2	6.5%
Co-Investment	126.9	2.7%	187.7	6.7%	314.6	4.2%
Other	331.5	7.1%	16.6	0.6%	348.1	4.7%
<b>Total</b>	<b>\$4,664.8</b>	<b>100.0%</b>	<b>\$2,805.5</b>	<b>100.0%</b>	<b>\$7,470.3</b>	<b>100.0%</b>

### By Fund Geographic Focus

As of June 30, 2018 (US\$ in millions)	Market Value		Unfunded Commitment		Total Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
North America	\$3,336.0	71.5%	\$1,596.0	56.9%	\$4,932.0	66.0%
Global	744.9	16.0%	524.8	18.7%	1,269.7	17.0%
Western Europe	574.0	12.3%	684.7	24.4%	1,258.7	16.8%
Rest of World	9.9	0.2%	-	0.0%	9.9	0.1%
<b>Total</b>	<b>\$4,664.8</b>	<b>100.0%</b>	<b>\$2,805.5</b>	<b>100.0%</b>	<b>\$7,470.3</b>	<b>100.0%</b>

Fund Geographic Focus is based on a number of factors, including the GP-stated geographic focus, the number of investments within each region, invested capital by region, the location of the firm's offices and investment professionals, and the underlying fund currency.

## II. Market Overview

### Executive Summary

Global equity markets came under pressure as a strengthening US dollar and escalating trade tensions led to increased volatility during the second quarter of 2018. The MSCI Emerging Markets index declined 8.7%, as the US and China failed to come to a sustainable trade agreement. The US continued to extend steel and aluminum tariffs to the European Union, Canada, and Mexico, following President Trump’s idealism of “America first”. The MSCI Europe index fell 2.7% as the euro tumbled against the US dollar amid concern that the European Central Bank will wind down its EUR30.0 billion per month bond-buying program in September. Political upheaval also weighed on investor sentiment as a snap election in Italy raised fears that third largest economy in Europe may leave the European Union. The S&P 500 Total Return index increased 3.4% for the quarter, with Energy increasing 13.5% from anticipated supply disruptions following the US withdrawal from the Iran nuclear deal. In global bond markets, less accommodative monetary policy has resulted in a reduction in liquidity. The US Federal Reserve raised interest rates at the June meeting, targeting 1.75% to 2.0%, and the 10-year US Treasury bond surpassed the psychologically significant 3.0% threshold during the quarter.

In private markets, US leveraged buyout (“LBO”) debt volume increased by 11.5% quarter-over-quarter, from US\$34.2 billion to US\$38.1 billion, 11.2% higher than the second quarter of 2017 and more than twice the 10-year quarterly average of US\$17.3 billion. According to data from S&P, purchase price multiples for US LBOs decreased to 9.8x EBITDA in the second quarter, down 3.2% from 10.2x EBITDA in the prior quarter, and above the 10-year average of 9.2x EBITDA. Average debt multiples of large corporate US LBO loans decreased to 5.6x for the quarter, above the 10-year average of 5.2x. Equity contributions for US LBOs increased to 41.2%, a 3.9% increase quarter-over-quarter and slightly below the 10-year average of 42.3%.<sup>1</sup>

Fundraising for global private equity totaled US\$88.6 billion in the second quarter of 2018, a 22.4% decrease compared to the prior quarter and a 56.5% decrease from the second quarter of 2017. Geographically, the US represented 67.3% of total funds raised in the quarter, higher than the 10-year average of 59.6%. Funds raised in Asia, Europe, and the Rest of World made up 17.3%, 9.1% and 6.3%, respectively, of global fundraising for the quarter. Invested capital for private equity funds increased 49.5% quarter-over-quarter and 107.8% year-over-year, with US\$106.7 billion invested in 3,213 deals. A significant portion of the capital deployed was in the Information Technology sector, accounting for 56.4% compared to the 10-year average of 35.4%.<sup>2</sup>

Private equity-backed IPO transaction volume increased in the second quarter with US\$9.0 billion raised in 42 IPOs. The amount raised through IPOs increased 9.4% compared to the prior quarter and was more than double the second quarter of 2017 amount of US\$4.1 billion. The largest IPOs of the quarter were completed by GreenSky Inc. (NASDAQ: GSKY), a provider of point-of-sale financing and payment solutions, which raised US\$1.0 billion and BJ’s Wholesale Club Inc. (NYSE: BJ), a warehouse club on the East Coast of the United States, which raised US\$733.1 million, representing 19.4% of the total value for all IPOs in the quarter. M&A activity increased in the second quarter with a total value of US\$213.8 billion, a 28.2% increase compared to the prior quarter and a 10.0% increase compared to the second quarter of 2017. The largest M&A deals of the quarter were the US\$36.8 billion purchase of Abertis Infraestructuras, S.A. by three acquirers and the US\$11.1 billion purchase of Dynegey Inc. by Vistra Energy Corp. (NYSE: VST). Together these deals represent 22.4% of the total value for all deals in the quarter.<sup>3</sup>

---

<sup>1</sup> S&P US LBO Review, Q2 2018

<sup>2</sup> Thomson ONE data as of September 6, 2018. Please note, all data in this report from Thomson ONE is subject to revision as further data is made available.

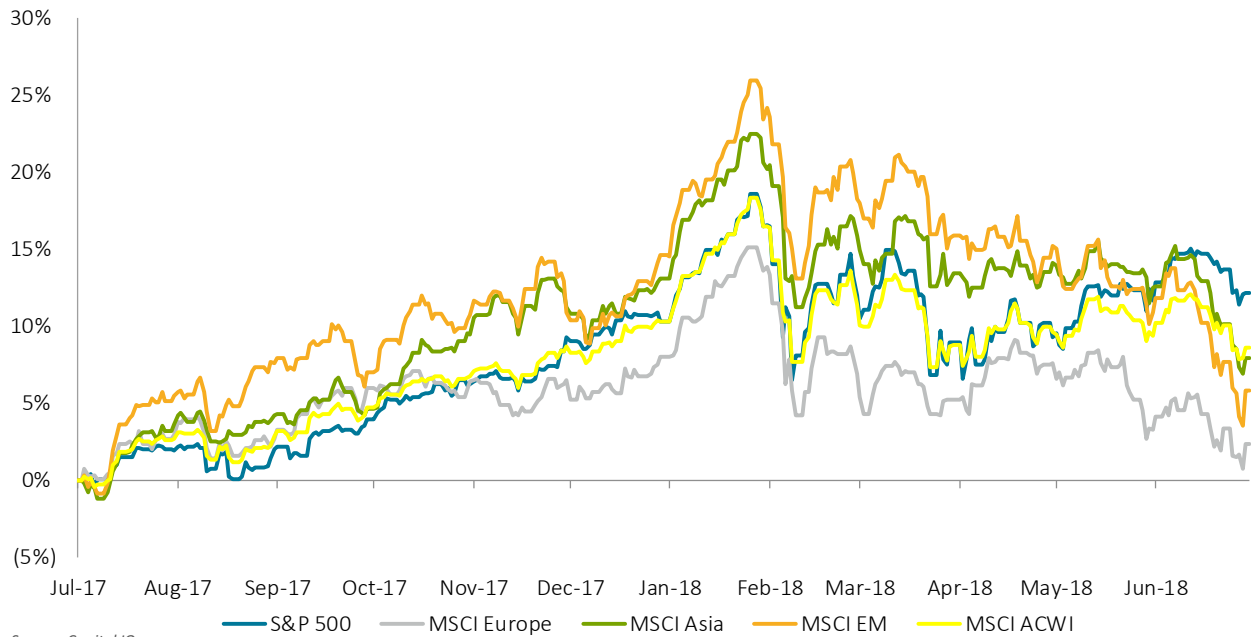
<sup>3</sup> Capital IQ Transaction Screening Report as of September 6, 2018

## Capital Markets Overview

### Public Equity Markets

Global public markets were impacted by US dollar strengthening during the second quarter of 2018, while US markets continued to advance. Energy, Consumer Discretionary, and Information Technology sectors for US equities rallied 13.5%, 8.2%, and 7.1% respectively. Although the US is late in the cycle, GDP growth, low unemployment, and robust corporate earnings provide for a strong economic backdrop.

1-Year Global Public Indices Returns



The following table shows the returns of four major MSCI indices, as well as the S&P 500 and the S&P 500 Total Return Index, over various time horizons through June 30, 2018. Returns for time periods greater than one year are annualized. During the quarter, US markets increased 3.4%, while the other indices decreased, with MSCI Europe declining 2.7%, MSCI Asia declined 4.8%, and MSCI Emerging Markets fell 8.7%.

### Regional Indices

	3 Mo	1 Yr	3 Yr	5 Yr	10 Yr
MSCI Asia	(4.8%)	7.9%	4.5%	5.6%	2.4%
MSCI Europe	(2.7%)	2.4%	1.3%	3.3%	(0.6%)
MSCI EM	(8.7%)	5.8%	3.2%	2.6%	(0.2%)
MSCI ACWI	(0.1%)	8.6%	6.1%	7.3%	3.6%
S&P 500	2.9%	12.2%	9.6%	11.1%	7.8%
S&P 500 Total Return*	3.4%	14.4%	11.9%	13.4%	10.2%

For the period ended June 30, 2018

\*Includes reinvestment of dividends.

Source: Capital IQ

The referenced indices are shown for general market comparisons and are not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented.

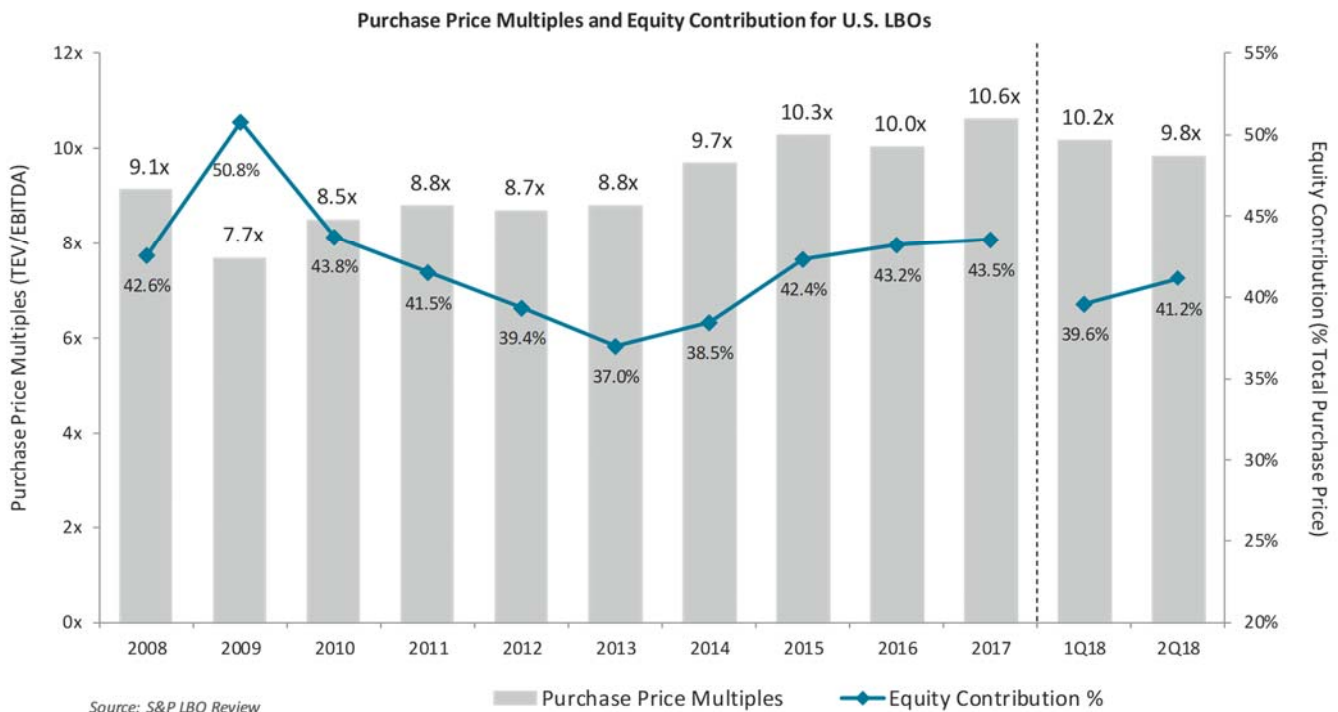


## Debt Markets

During the second quarter of 2018, US LBO new loan issuance totaled US\$38.1 billion, representing an increase of 11.5% from the prior quarter and an increase of 11.2% from the second quarter of 2017. The following chart shows the quarterly volume of US LBO new loan issuance for the past ten years.



The weighted average purchase price multiple for US LBO deals was 9.8x total enterprise value (“TEV”) to EBITDA in the second quarter, a decrease from 10.2x in the prior quarter and above the 10-year average of 9.2x. Average debt multiples of large corporate US LBO loans decreased quarter-over-quarter from 5.9x EBITDA to 5.6x EBITDA, as equity contributions for US LBOs increased from 39.6% to 41.2%. The following chart compares purchase price multiples and equity contribution percentages for US LBO deals for the past ten years.



## Private Equity Market Overview

### All Private Equity

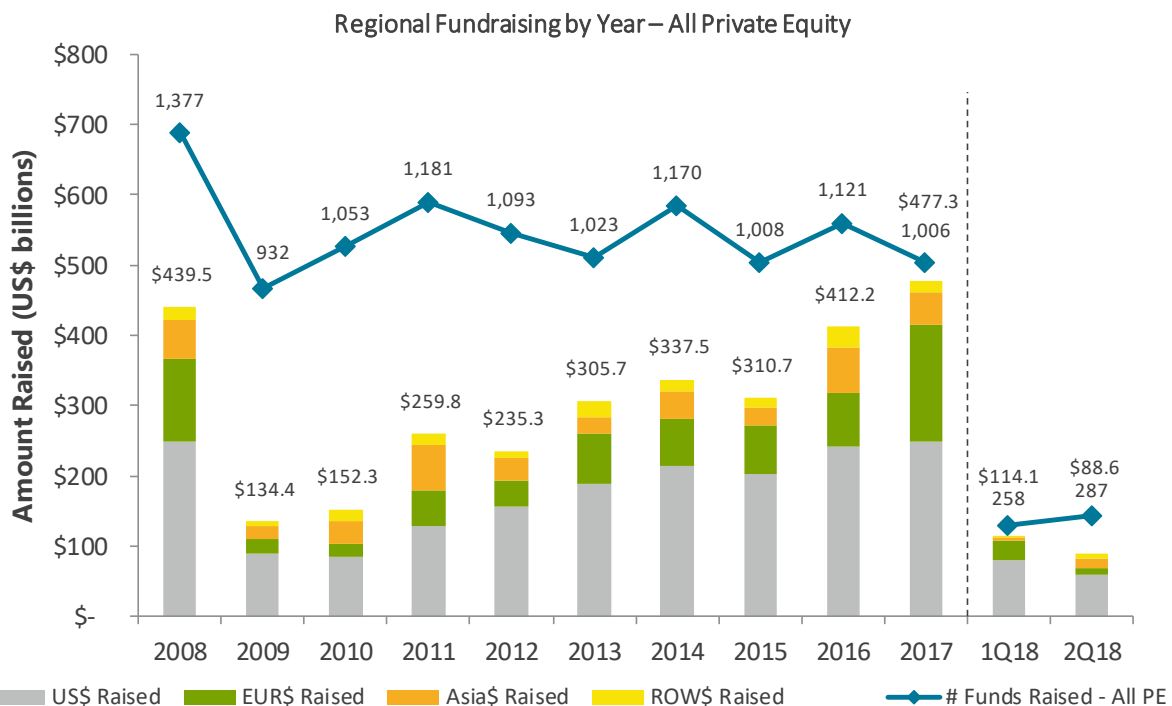
The table below shows the pooled Internal Rate of Return (“IRR”) performance of global private equity investments by sector over various investment horizons through June 30, 2018. The All Private Equity benchmark had an IRR of 3.5% for the quarter. All five sectors were positive for the quarter, led by Venture Capital with 6.2%, followed by Large Buyouts with 3.8%, Energy with 2.0%, Small/Middle Buyouts with 1.8%, and Mezzanine with 0.6%.

Sector	3 Mo	1 Yr	3 Yr	5 Yr	10 Yr
Small/Middle Buyouts (<\$3bn)	1.8%	16.3%	13.0%	13.2%	9.2%
Large Buyouts (>\$3bn)	3.8%	17.3%	14.2%	15.3%	10.1%
Mezzanine	0.6%	11.3%	8.9%	9.9%	7.7%
Energy	2.0%	9.1%	4.2%	2.9%	5.0%
Venture Capital	6.2%	22.2%	10.1%	17.9%	11.6%
<b>All Private Equity</b>	<b>3.5%</b>	<b>16.9%</b>	<b>11.6%</b>	<b>13.9%</b>	<b>9.8%</b>

Source: Burgiss PrivateIQ

### Fundraising

Global private equity fundraising totaled US\$88.6 billion in the second quarter, representing a decrease of 22.4% quarter-over-quarter and a decrease of 56.5% compared to the second quarter of 2017. Buyout fundraising totaled US\$59.7 billion, decreasing 18.5% quarter-over-quarter and 66.5% compared to the second quarter of 2017. Venture Capital raised US\$20.0 billion in the second quarter, an increase of 46.2% compared to the prior quarter and 12.8% compared to the second quarter of 2017. Geographically, the US represented 67.3% of total funds raised in the quarter, higher than the 10-year average of 59.6%. Funds raised in Asia, Europe, and the Rest of World made up 17.3%, 9.1% and 6.3%, respectively, of global fundraising for the quarter. The chart below shows annual private equity fundraising activity across all sectors over the past ten years.

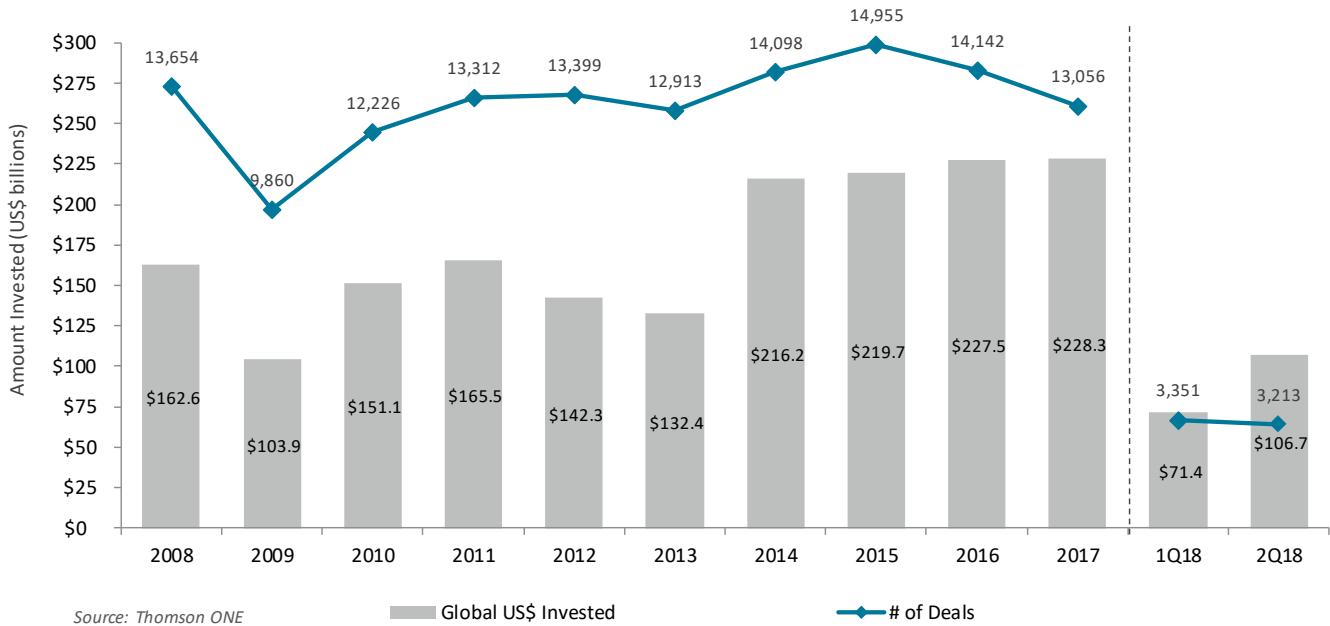


Source: Thomson ONE

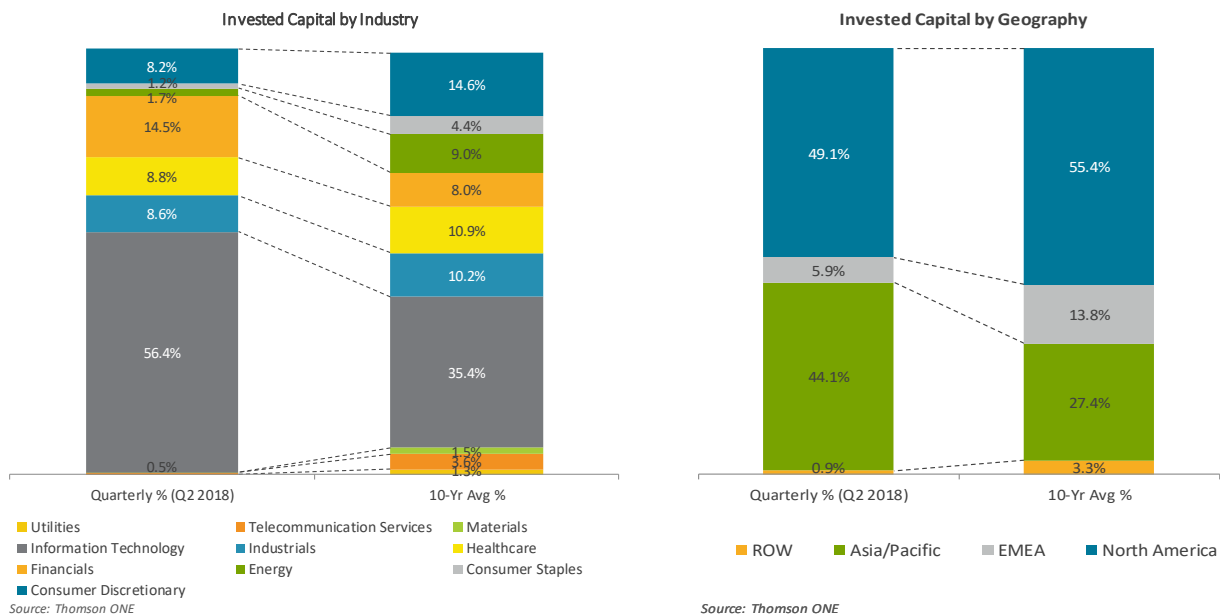
### Investment Activity

Private equity funds invested US\$106.7 billion globally during the second quarter, representing a quarter-over-quarter increase of 49.5% and a 107.8% increase from the second quarter of 2017. The average investment size during the quarter was US\$33.2 million, an increase of 55.9% compared to the average investment size of US\$21.3 million in the first quarter.

**Investment Activity - All Private Equity**

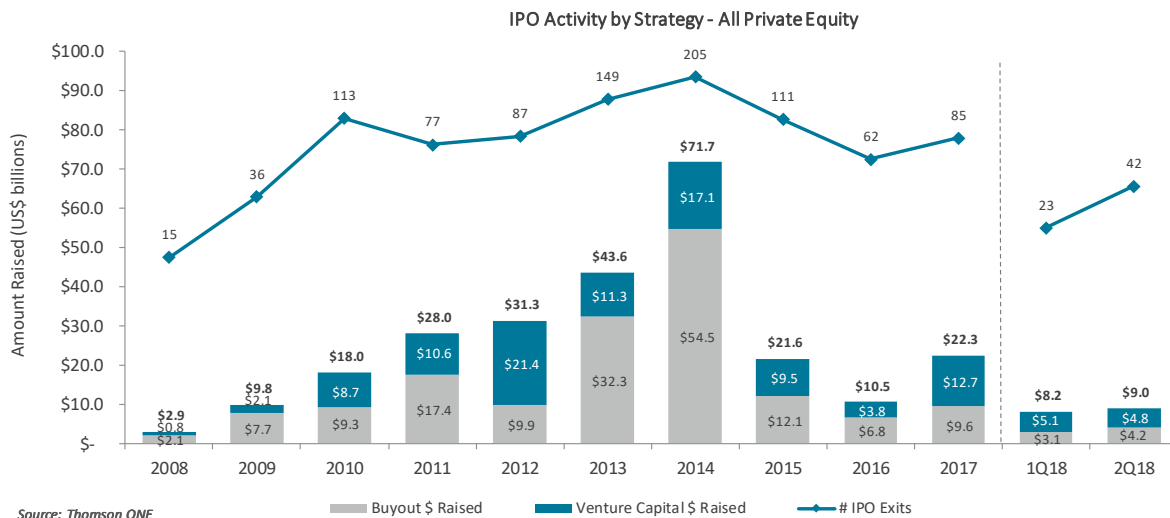


The graphs below depict the percentage of invested capital by industry and geography for the second quarter of 2018 and over the last ten years. The Information Technology sector attracted the most capital, accounting for US\$41.1 billion of transactions, or 56.4% of total capital invested by private equity firms, compared to its 10-year average of 35.4%. Considering geography, investment activity was above average in Asia/Pacific, comprising 44.1% of total capital invested compared to its 10-year historical average of 27.4%.

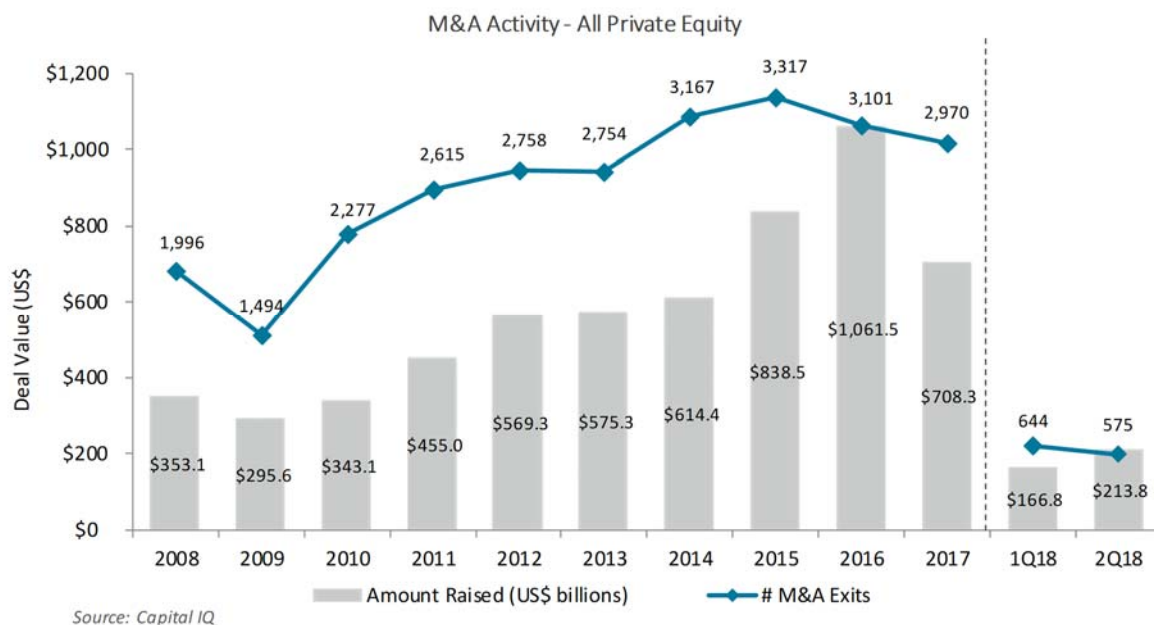


## Deal Environment

In the second quarter, the number of private equity-backed IPOs increased 82.6%, from 23 to 42, and the amount raised increased 9.4%, from US\$8.2 billion to US\$9.0 billion, compared to the prior quarter. The second quarter IPOs were comprised of 33 venture capital-backed IPOs that raised a total of US\$4.8 billion and nine IPOs from buyouts that raised US\$4.2 billion. The largest IPOs of the quarter were completed by GreenSky Inc. (NASDAQ: GSKY), a provider of point-of-sale financing and payment solutions, which raised US\$1.0 billion and BJ's Wholesale Club Inc. (NYSE: BJ), a warehouse club on the East Coast of the United States, which raised US\$733.1 million, representing 19.4% of the total value for all IPOs in the quarter. The graph below shows the amount raised and the number of IPOs on the NYSE and NASDAQ over the past ten years.



The number of private equity-backed Mergers and Acquisitions (“M&A”) declined 10.7%, and the total value of M&A deals increased 28.2% compared to the prior quarter. In the second quarter, there were 575 private-equity backed M&A deals totaling US\$213.8 billion. The largest M&A deals of the quarter were the US\$36.8 billion purchase of Abertis Infraestructuras, S.A. by three acquirers and the US\$11.1 billion purchase of Dynegy Inc. by Vistra Energy Corp. (NYSE: VST). Together these deals represent 22.4% of the total value for all deals in the quarter. The graph below shows the deal value and the number of M&A deals over the past ten years.



### III. Portfolio Review

#### Quarterly Highlights

- Cash Flow Activity** – During the second quarter of 2018, the Portfolio made US\$103.2 million of contributions and received US\$230.7 million of distributions, for a net cash inflow of US\$127.5 million, compared to a net cash inflow of US\$16.0 million during the prior quarter and a net cash inflow of US\$180.7 million during the second quarter of 2017. Contributions decreased 35.3% from the prior quarter and decreased 21.9% from the second quarter of 2017. The most recent four quarter average of the Program’s contributions is US\$195.9 million. Distributions increased 31.6% from the prior quarter and decreased 26.3% from the second quarter of 2017. The most recent four quarter average of the Program’s distributions is US\$287.6 million.
- Recent Portfolio Activity** – During the second quarter of 2018, net of cash flow activity, the valuation of the Portfolio increased by US\$97.0 million, or 2.2%, from the prior quarter. The increase in Portfolio value is primarily attributable to strong performance of Large Buyout funds during the quarter, which generated a US\$35.5 million increase in valuation from the prior quarter-end. During the last twelve months, net of cash flow activity, the valuation of the Portfolio increased by US\$675.0 million, or 17.2%, from the quarter ended June 30, 2017.
- New Investment Commitments** – The Program closed on five new investment commitments during the second quarter of 2018, totaling US\$193.0 million.

<i>As of June 30, 2018 (US\$ in millions)</i>	Month Closed	Sub-Strategy	Geographic Focus	Committed Capital
Crestview Partners IV, L.P.	June 2018	Buyout	North America	\$ 71.0
Crestview Partners IV (Co-Investment), L.P.	June 2018	Side Car	North America	23.7
Platinum Equity Small Cap Fund, L.P.	June 2018	Special Situations	North America	41.0
Platinum Equity Capital Partners IV Co-Investment, L.P.	June 2018	Side Car	North America	16.0
EQT VIII Co-Investment	June 2018	Side Car	Europe	41.4
<b>Total</b>				<b>\$ 193.0</b>

- Subsequent Investment Commitments** – Subsequent to quarter-end through November 21, 2018, the Program has closed on four new investment commitments, totaling US\$375.8 million.

<i>As of November 21, 2018 (US\$ in millions)</i>	Month Closed	Sub-Strategy	Geographic Focus	Committed Capital
Raine Partners III, LP	July 2018	Growth Equity	North America	\$ 26.0
Welsh, Carson, Anderson & Stowe XIII, L.P.	July 2018	Buyout	North America	89.0
Vista Equity Partners Fund VII, L.P.	September 2018	Buyout	Global	177.5
KKR European Fund V (USD) SCSp	November 2018	Buyout	Europe	83.3
<b>Total</b>				<b>\$ 375.8</b>

## Investment Performance

### Since Inception Performance

US\$ in millions	June 30, 2018	March 31, 2018	June 30, 2017	Quarterly Change	Yearly Change
<b>Active Investments</b>					
Number of Managers	96	96	95	-	1
Number of Investments	181	176	167	5	14
Committed Capital <sup>1</sup>	\$9,709.8	\$9,550.2	\$8,853.0	\$159.6	\$856.8
Contributed Capital	\$7,946.3	\$7,843.2	\$7,216.8	\$103.2	\$729.5
Distributed Capital	\$6,965.3	\$6,735.7	\$5,866.2	\$229.6	\$1,099.2
Market Value	\$4,664.8	\$4,596.8	\$4,405.4	\$68.1	\$259.5
Total Value	\$11,630.2	\$11,332.5	\$10,271.5	\$297.7	\$1,358.7
Total Gain/(Loss)	\$3,683.9	\$3,489.4	\$3,054.7	\$194.5	\$629.2
Unfunded Commitment <sup>2</sup>	\$2,805.5	\$2,736.1	\$2,603.4	\$69.4	\$202.1
Total Exposure <sup>3</sup>	\$7,470.3	\$7,332.9	\$7,008.8	\$137.4	\$461.6
DPI <sup>4</sup>	0.88x	0.86x	0.81x	0.02x	0.06x
TVM <sup>5</sup>	1.46x	1.44x	1.42x	0.02x	0.04x
IRR <sup>6</sup>	10.3%	10.2%	9.9%	+ 14 bps	+ 46 bps
<b>Exited Investments</b>					
Number of Managers	20	20	18	-	2
Number of Investments	23	23	21	-	2
Committed Capital <sup>1</sup>	\$666.3	\$666.3	\$616.3	\$0.0	\$50.0
Contributed Capital	\$772.4	\$772.4	\$718.1	(\$0.0)	\$54.3
Distributed Capital	\$949.0	\$947.9	\$897.6	\$1.0	\$51.4
Total Value	\$949.0	\$951.1	\$897.6	(\$2.2)	\$51.4
Total Gain/(Loss)	\$176.6	\$178.7	\$179.4	(\$2.1)	(\$2.9)
Unfunded Commitment <sup>2</sup>	\$0.0	\$0.5	\$0.0	(\$0.5)	\$0.0
DPI <sup>4</sup>	1.23x	1.23x	1.25x	0.00x	-0.02x
TVM <sup>5</sup>	1.23x	1.23x	1.25x	0.00x	-0.02x
IRR <sup>6</sup>	6.3%	6.3%	6.8%	- 5 bps	- 51 bps
<b>Total Portfolio</b>					
Number of Managers	110	110	108	-	2
Number of Investments	204	199	188	5	16
Committed Capital <sup>1</sup>	\$10,376.1	\$10,216.5	\$9,469.3	\$159.6	\$906.8
Contributed Capital	\$8,718.7	\$8,615.5	\$7,934.9	\$103.2	\$783.7
Distributed Capital	\$7,914.3	\$7,683.7	\$6,763.7	\$230.7	\$1,150.6
Market Value	\$4,664.8	\$4,600.0	\$4,405.4	\$64.9	\$259.5
Total Value	\$12,579.1	\$12,283.6	\$11,169.1	\$295.5	\$1,410.1
Total Gain/(Loss)	\$3,860.5	\$3,668.1	\$3,234.1	\$192.4	\$626.3
Unfunded Commitment <sup>2</sup>	\$2,805.5	\$2,736.7	\$2,603.4	\$68.8	\$202.1
Total Exposure <sup>3</sup>	\$7,470.3	\$7,336.6	\$7,008.8	\$133.7	\$461.6
DPI <sup>4</sup>	0.91x	0.89x	0.85x	0.02x	0.06x
TVM <sup>5</sup>	1.44x	1.43x	1.41x	0.02x	0.04x
IRR <sup>6</sup>	9.9%	9.8%	9.5%	+ 14 bps	+ 36 bps
TVM Net of StepStone Fees <sup>7</sup>	1.44x	1.42x	1.41x	0.02x	0.04x
IRR Net of StepStone Fees <sup>7</sup>	9.9%	9.7%	9.5%	+ 14 bps	+ 36 bps

<sup>1</sup> Committed Capital is presented net of any commitment releases or expirations and reflects foreign currency exchange rate fluctuations. Total committed includes underlying fund commitments to the EM 2012 and 2015 Programs.

<sup>2</sup> Unfunded Commitment represents the aggregate remaining commitments to partnership investments.

<sup>3</sup> Total Exposure represents the sum of Market Value and Unfunded Commitment.

<sup>4</sup> DPI, or Distributed to Paid-In Multiple, is a performance metric that measures distributions received relative to capital invested. DPI is calculated as Distributed Capital divided by Contributed Capital.

<sup>5</sup> TVM, or Total Value Multiple, is a performance metric that measures total value created by the Portfolio relative to capital invested, without consideration for time. TVM is calculated as Total Value, which is comprised of Market Value plus Distributed Capital, divided by Contributed Capital.

<sup>6</sup> IRR, or Internal Rate of Return, is a performance metric that is calculated based on the Portfolio's daily cash flows and market value as of quarter-end. IRR is net of fund manager's fees, expenses and carried interest.

Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve comparable results or avoid substantial losses.

### Performance by Vintage Year

The following table and chart illustrate the Portfolio's since inception investment performance by vintage year as of June 30, 2018 relative to the median quartile U.S. All Private Equity TVM and IRR benchmarks as provided by Burgiss Private iQ. Performance of funds that are less than two years old are not meaningful. Note that Burgiss Private iQ data is continuously updated and is therefore subject to change.

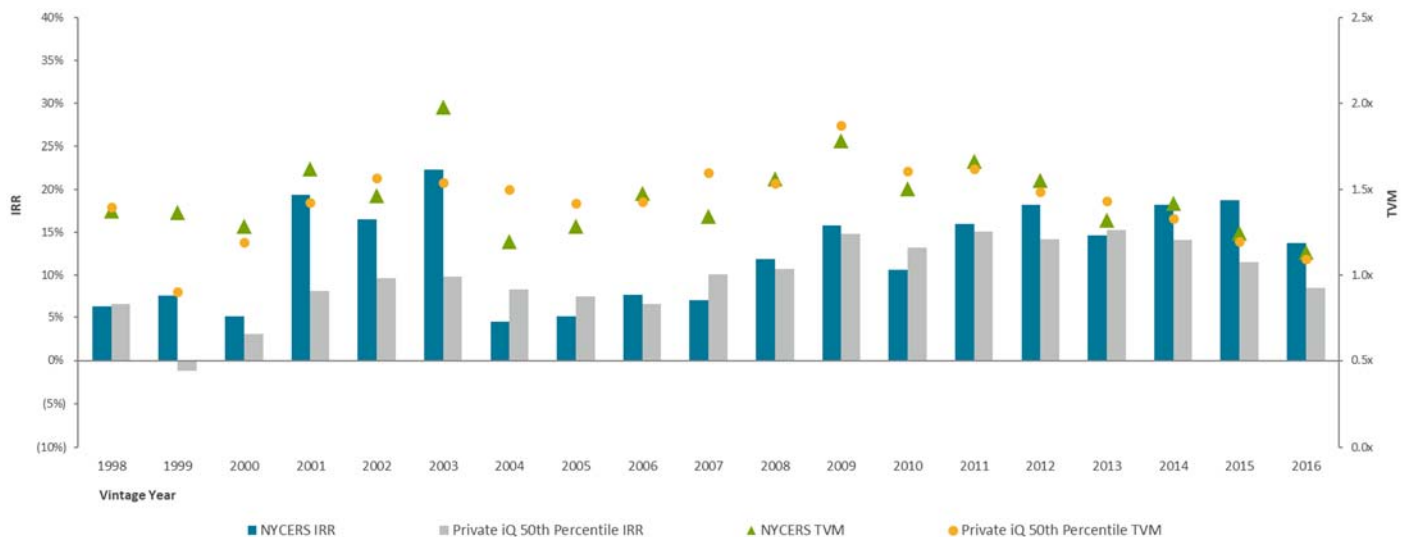
As of June 30, 2018 (US\$ in millions)

Vintage Year	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Unfunded Commitment	Total Exposure	TVM	IRR	PME Benchmark <sup>1</sup>	PME Spread <sup>2</sup>	Private iQ U.S. All PE 50th Percentile TVM	Private iQ U.S. All PE 50th Percentile IRR
1998	\$50.0	\$50.2	\$69.1	\$0.0	\$0.0	\$0.0	1.37x	6.3%	3.4%	2.9%	1.40x	6.5%
1999	88.6	102.1	139.0	0.7	-	0.7	1.37x	7.6%	6.2%	1.3%	0.90x	(1.2%)
2000	116.9	137.0	173.9	2.5	7.5	9.9	1.29x	5.1%	5.3%	-0.2%	1.20x	3.1%
2001	98.1	128.5	206.5	2.0	2.8	4.8	1.62x	19.4%	7.7%	11.7%	1.43x	8.0%
2002	100.0	124.8	180.6	2.1	2.8	4.9	1.46x	16.5%	7.1%	9.4%	1.57x	9.7%
2003	104.4	114.2	221.0	5.2	11.9	17.0	1.98x	22.3%	6.9%	15.5%	1.54x	9.9%
2004	433.6	475.5	496.3	74.1	18.3	92.4	1.20x	4.5%	7.9%	-3.4%	1.50x	8.3%
2005	520.7	576.0	654.6	85.8	17.0	102.8	1.29x	5.1%	7.0%	-1.9%	1.42x	7.4%
2006	992.8	1,120.6	1,402.5	253.5	29.0	282.5	1.48x	7.6%	8.7%	-1.1%	1.43x	6.6%
2007	940.2	1,009.7	1,094.7	265.8	64.1	329.8	1.35x	7.0%	11.7%	-4.6%	1.60x	10.1%
2008	1,235.1	1,407.1	1,484.0	718.4	98.0	816.4	1.57x	12.0%	13.9%	-1.9%	1.54x	10.8%
2009	179.2	181.0	224.2	98.6	10.9	109.5	1.78x	15.9%	14.7%	1.1%	1.87x	14.8%
2010	175.0	191.7	141.6	147.4	10.8	158.3	1.51x	10.7%	13.1%	-2.5%	1.61x	13.2%
2011	788.4	809.7	735.8	612.6	99.9	712.5	1.67x	16.0%	13.6%	2.3%	1.62x	15.1%
2012	610.5	600.0	395.6	537.3	85.2	622.5	1.55x	18.2%	12.8%	5.4%	1.49x	14.2%
2013	463.1	367.4	114.8	371.3	124.3	495.6	1.32x	14.7%	12.5%	2.2%	1.44x	15.3%
2014	601.1	472.1	132.1	539.8	173.1	713.0	1.42x	18.3%	12.5%	5.8%	1.33x	14.1%
2015	828.6	458.3	33.7	538.5	382.2	920.7	1.25x	18.8%	15.1%	3.8%	1.20x	11.6%
2016	396.0	230.2	7.3	254.5	169.5	424.0	1.14x	13.8%	15.2%	-1.4%	1.10x	8.4%
2017	652.6	157.7	7.0	149.8	502.0	651.8	NM	NM	NM	N/A	NM	NM
2018	1,001.2	4.8	-	4.9	996.3	1,001.2	NM	NM	NM	N/A	NM	NM
<b>Total</b>	<b>\$10,376.1</b>	<b>\$8,718.7</b>	<b>\$7,914.3</b>	<b>\$4,664.8</b>	<b>\$2,805.5</b>	<b>\$7,470.3</b>	<b>1.44x</b>	<b>9.9%</b>	<b>10.4%</b>	<b>-0.5%</b>	<b>1.35x</b>	<b>9.3%</b>

<sup>1</sup> Russell 3000 PME+

<sup>2</sup> PME Spread is calculated as IRR minus PME Benchmark.

As of June 30, 2018



## Portfolio Periodic Returns vs. Russell 3000® Index

As of June 30, 2018	3 Month	1 Year	3 Year	5 Year	10 Year	Since Inception
NYCERS IRR	4.2%	14.8%	11.7%	11.9%	9.3%	9.9%
Russell 3000® <sup>1</sup>	4.0%	15.0%	11.4%	13.5%	11.5%	10.4%
Russell 3000® + 300 bps <sup>2</sup>	7.0%	18.0%	14.4%	16.5%	14.5%	13.4%
<b>NYCERS Outperformance/(Underperformance)</b>						
vs. Russell 3000® + 300 bps <sup>2</sup>	(2.7%)	(3.1%)	(2.7%)	(4.7%)	(5.1%)	(3.5%)

<sup>1</sup>Benchmark is a dollar-weighted PME+ calculation of daily changes in the Russell 3000® Index. Russell Investment Group is the source and owner of the trademark, service marks and copyrights related to the Russell Indexes. Russell® is a trademark of Russell Investment Group.

<sup>2</sup>Benchmark is a dollar-weighted PME+ calculation of daily changes in the Russell 3000® Index plus a 300 basis point illiquidity premium (the Opportunity Cost Benchmark).

Note: The referenced indices are shown for general market comparisons and are not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented.

## Performance by Strategy / Sub-Strategy

The following table and charts illustrate the Portfolio's since inception investment performance by strategy and sub-strategy as of June 30, 2018.

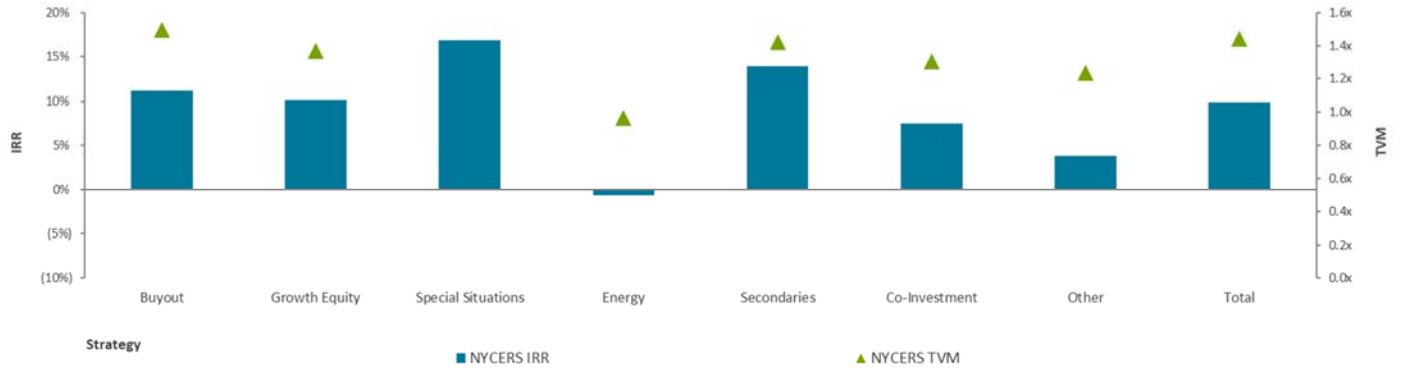
As of June 30, 2018 (US\$ in millions)

Strategy / Sub-Strategy	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Unfunded Commitment	Total Exposure	TVM	IRR
<b>Buyout</b>	<b>\$6,695.8</b>	<b>\$5,633.9</b>	<b>\$5,462.2</b>	<b>\$2,964.9</b>	<b>\$1,878.2</b>	<b>\$4,843.1</b>	<b>1.50x</b>	<b>11.2%</b>
Mega Buyout	2,071.6	1,201.7	902.6	776.8	1,017.7	1,794.5	1.40x	11.3%
Large Buyout	1,911.2	1,761.4	1,628.5	1,169.0	389.4	1,558.4	1.59x	15.2%
Middle-Market Buyout	1,534.4	1,434.7	1,648.0	527.2	338.2	865.4	1.52x	9.8%
Small Buyout	1,178.6	1,236.1	1,283.1	491.8	132.9	624.7	1.44x	9.0%
<b>Growth Equity</b>	<b>661.0</b>	<b>459.7</b>	<b>240.0</b>	<b>389.6</b>	<b>240.7</b>	<b>630.3</b>	<b>1.37x</b>	<b>10.1%</b>
<b>Special Situations</b>	<b>812.2</b>	<b>700.7</b>	<b>662.0</b>	<b>472.3</b>	<b>254.3</b>	<b>726.6</b>	<b>1.62x</b>	<b>16.9%</b>
<b>Energy</b>	<b>355.0</b>	<b>391.8</b>	<b>267.6</b>	<b>110.6</b>	<b>12.9</b>	<b>123.5</b>	<b>0.97x</b>	<b>-0.7%</b>
<b>Secondaries</b>	<b>746.6</b>	<b>543.2</b>	<b>504.4</b>	<b>269.0</b>	<b>215.2</b>	<b>484.2</b>	<b>1.42x</b>	<b>13.9%</b>
<b>Co-Investment</b>	<b>382.7</b>	<b>202.1</b>	<b>136.6</b>	<b>126.9</b>	<b>187.7</b>	<b>314.6</b>	<b>1.30x</b>	<b>7.5%</b>
<b>Other</b>	<b>722.9</b>	<b>787.3</b>	<b>641.5</b>	<b>331.5</b>	<b>16.6</b>	<b>348.1</b>	<b>1.24x</b>	<b>3.8%</b>
Venture Capital	656.5	696.5	514.1	330.1	12.6	342.8	1.21x	3.2%
Mezzanine	66.3	90.9	127.4	1.4	3.9	5.3	1.42x	13.4%
<b>Total</b>	<b>\$10,376.1</b>	<b>\$8,718.7</b>	<b>\$7,914.3</b>	<b>\$4,664.8</b>	<b>\$2,805.5</b>	<b>\$7,470.3</b>	<b>1.44x</b>	<b>9.9%</b>



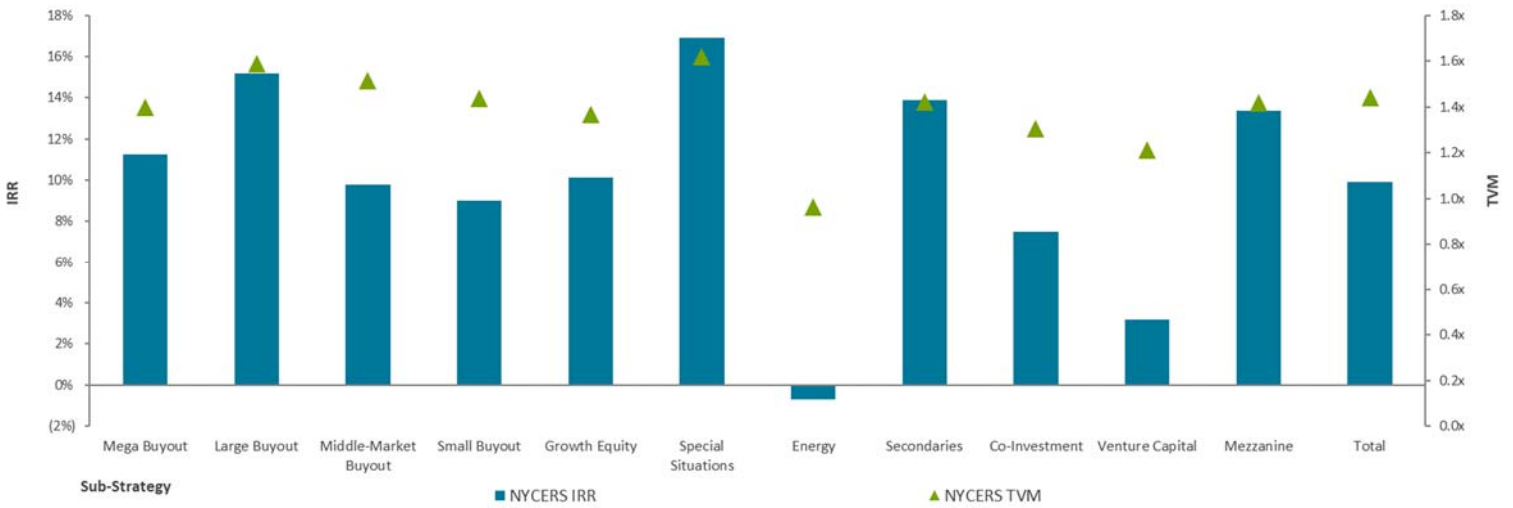
### Performance by Strategy

As of June 30, 2018



### Performance by Sub-Strategy

As of June 30, 2018



## Portfolio Diversification

The following tables illustrate the Portfolio's diversification by strategy and fund geographic focus as of June 30, 2018.

### By Strategy/Sub-Strategy

As of June 30, 2018 (US\$ in millions)	Market Value		Unfunded Commitment		Total Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
<b>Buyout</b>	<b>\$2,964.9</b>	<b>63.6%</b>	<b>\$1,878.2</b>	<b>66.9%</b>	<b>\$4,843.1</b>	<b>64.8%</b>
Mega Buyout	776.8	16.7%	1,017.7	36.3%	1,794.5	24.0%
Large Buyout	1,169.0	25.1%	389.4	13.9%	1,558.4	20.9%
Middle-Market Buyout	527.2	11.3%	338.2	12.1%	865.4	11.6%
Small Buyout	491.8	10.5%	132.9	4.7%	624.7	8.4%
<b>Growth Equity</b>	<b>389.6</b>	<b>8.4%</b>	<b>240.7</b>	<b>8.6%</b>	<b>630.3</b>	<b>8.4%</b>
<b>Special Situations</b>	<b>472.3</b>	<b>10.1%</b>	<b>254.3</b>	<b>9.1%</b>	<b>726.6</b>	<b>9.7%</b>
<b>Energy</b>	<b>110.6</b>	<b>2.4%</b>	<b>12.9</b>	<b>0.5%</b>	<b>123.5</b>	<b>1.7%</b>
<b>Secondaries</b>	<b>269.0</b>	<b>5.8%</b>	<b>215.2</b>	<b>7.7%</b>	<b>484.2</b>	<b>6.5%</b>
<b>Co-Investment</b>	<b>126.9</b>	<b>2.7%</b>	<b>187.7</b>	<b>6.7%</b>	<b>314.6</b>	<b>4.2%</b>
<b>Other</b>	<b>331.5</b>	<b>7.1%</b>	<b>16.6</b>	<b>0.6%</b>	<b>348.1</b>	<b>4.7%</b>
Venture Capital	330.1	7.1%	12.6	0.5%	342.8	4.6%
Mezzanine	1.4	0.0%	3.9	0.1%	5.3	0.1%
<b>Total</b>	<b>\$4,664.8</b>	<b>100.0%</b>	<b>\$2,805.5</b>	<b>100.0%</b>	<b>\$7,470.3</b>	<b>100.0%</b>

### By Fund Geographic Focus

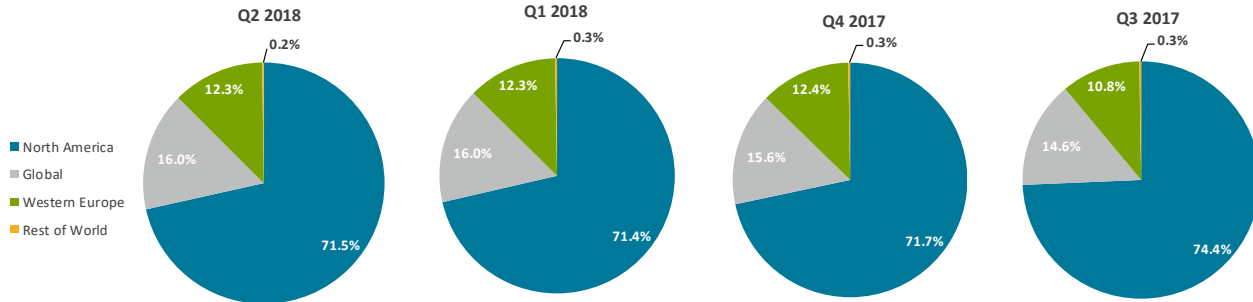
As of June 30, 2018 (US\$ in millions)	Market Value		Unfunded Commitment		Total Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
North America	\$3,336.0	71.5%	\$1,596.0	56.9%	\$4,932.0	66.0%
Global	744.9	16.0%	524.8	18.7%	1,269.7	17.0%
Western Europe	574.0	12.3%	684.7	24.4%	1,258.7	16.8%
Rest of World	9.9	0.2%	-	0.0%	9.9	0.1%
<b>Total</b>	<b>\$4,664.8</b>	<b>100.0%</b>	<b>\$2,805.5</b>	<b>100.0%</b>	<b>\$7,470.3</b>	<b>100.0%</b>

Fund Geographic Focus is based on a number of factors, including the GP-stated geographic focus, the number of investments within each region, invested capital by region, the location of the firm's offices and investment professionals, and the underlying fund currency.

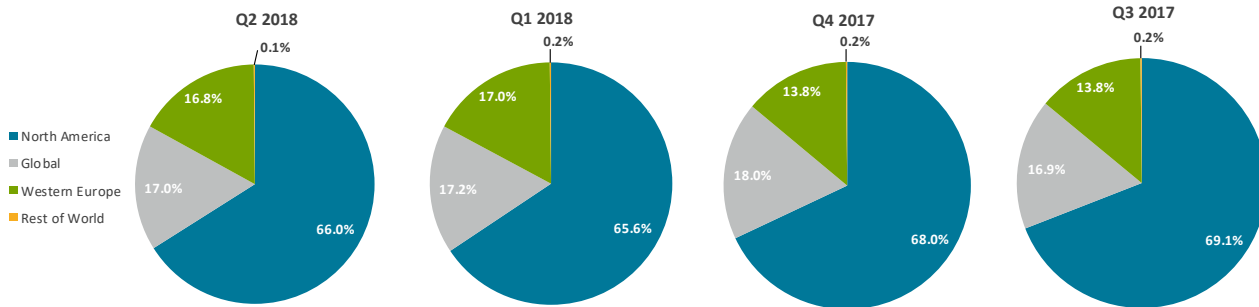
### By Fund Geographic Focus

The following charts illustrate the Portfolio's diversification by fund geographic focus for the most recent four quarters as of June 30, 2018.

**Geographic Exposure by Market Value**



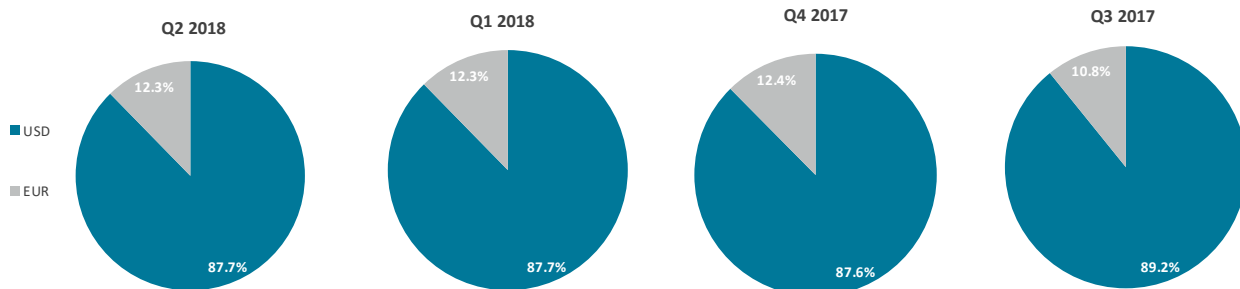
**Geographic Exposure by Market Value + Unfunded**



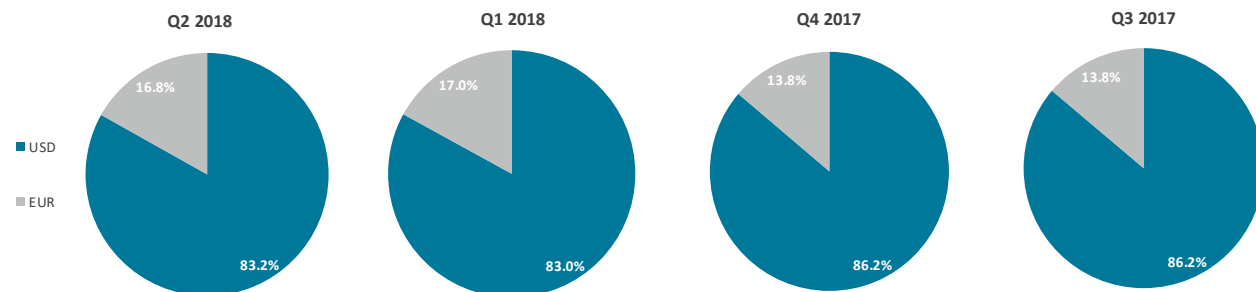
### By Fund Currency

The following charts illustrate the Portfolio's diversification by fund currency for the most recent four quarters as of June 30, 2018.

**Fund Currency Exposure by Market Value**



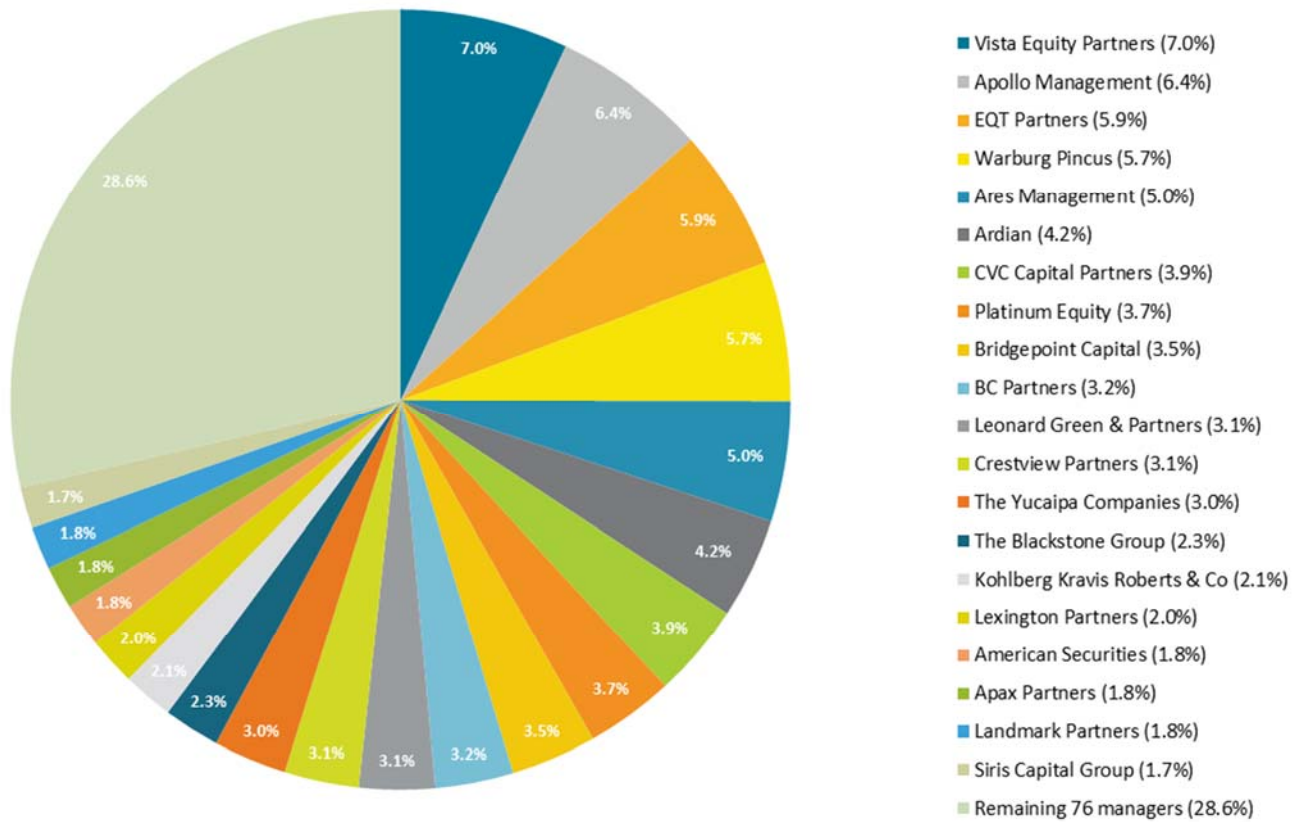
**Fund Currency Exposure by Market Value + Unfunded**



**By Investment Manager**

As of June 30, 2018, the Portfolio was highly diversified by investment manager, with 20 managers comprising US\$5.3 billion, or 71.4% of total exposure. The remaining 76 managers comprised 28.6% of total exposure as of quarter-end.

**Portfolio Total Exposure by Investment Manager**  
 As of June 30, 2018

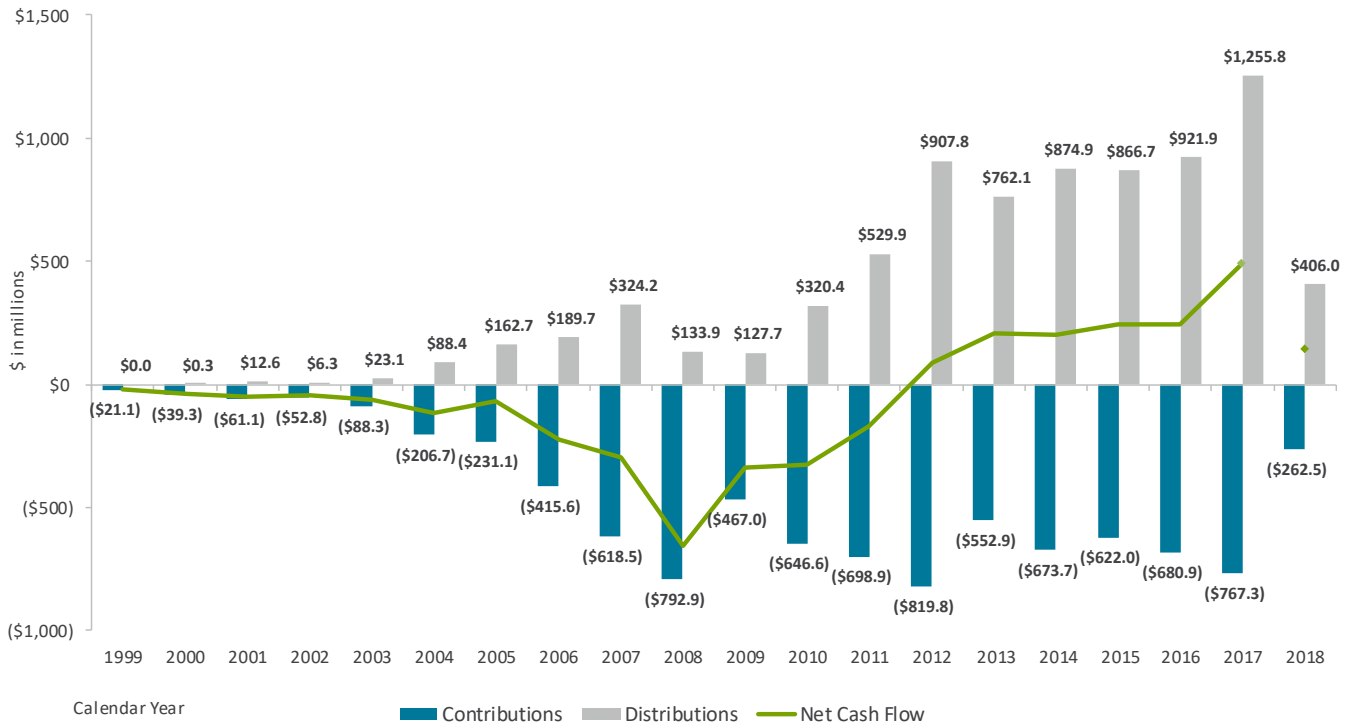


## Portfolio Cash Flow Analysis

The following yearly and quarterly cash flow analysis is based on actual Portfolio cash flows during those time periods.

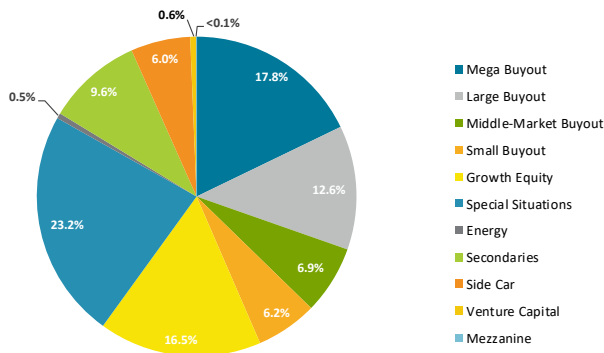
### Year to Date Cash Flow Activity

During the six months ended June 30, 2018, the Portfolio made US\$262.5 million of contributions and received US\$406.0 million of distributions, for a net cash inflow of US\$143.5 million, compared to a net cash inflow of US\$180.7 million during the same period in the prior year. The graph below illustrates cash flow activity since inception by calendar year.

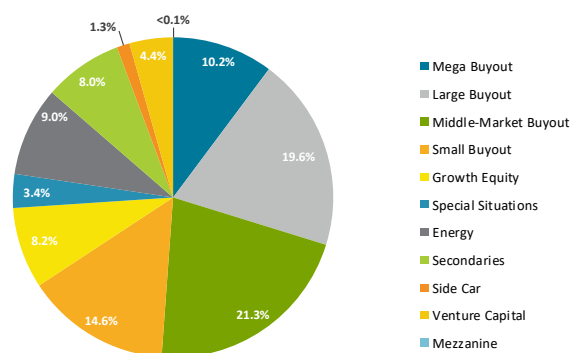


Buyout funds were the most active in terms of cash flow activity during 2018. Buyout funds drew down US\$262.5 million, or 43.2% of total contributions during 2018, and distributed US\$406.0 million, or 65.4% of total distributions during 2018.

2018 Total Contributed by Sub-Strategy

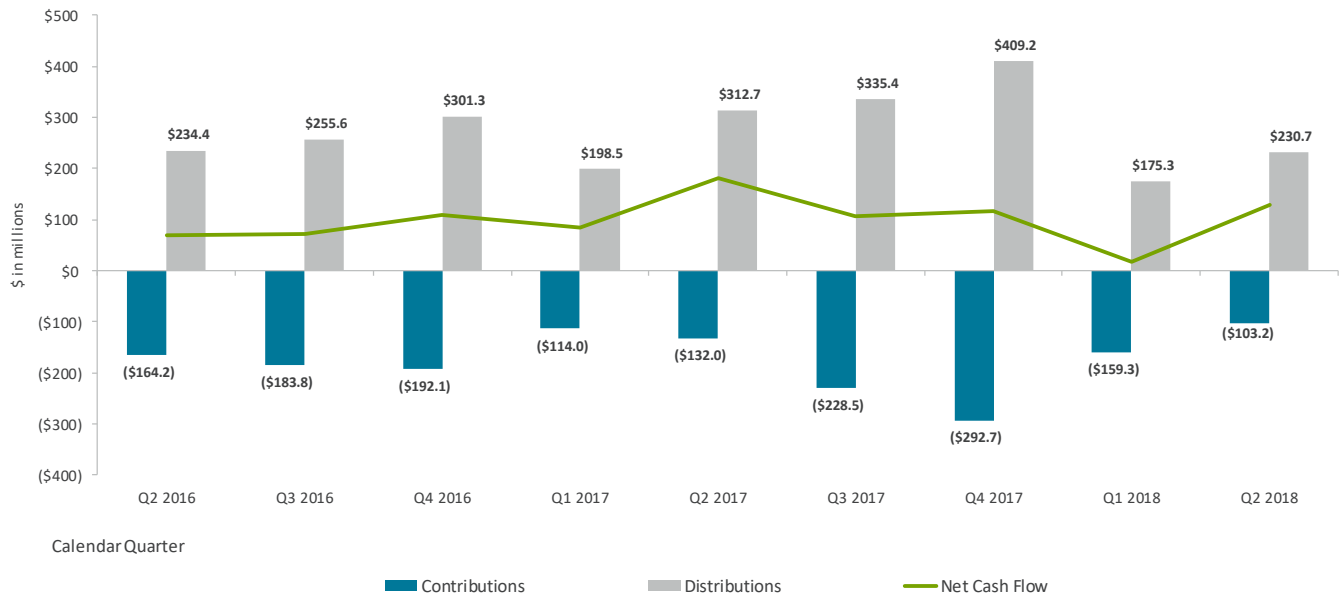


2018 Total Distributed by Sub-Strategy



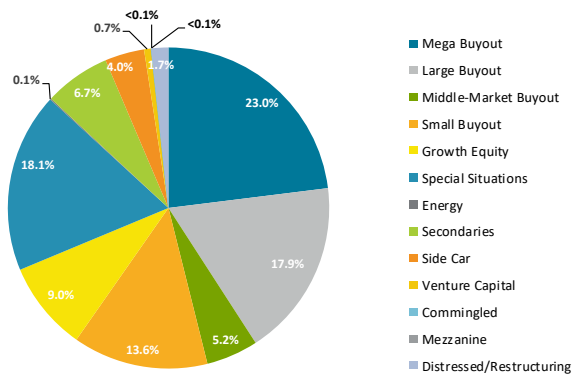
### Quarterly Cash Flow Activity

During the second quarter of 2018, the Portfolio made US\$103.2 million of contributions and received US\$230.7 million of distributions, for a net cash inflow of US\$127.5 million. The graph below illustrates recent cash flow activity by quarter.

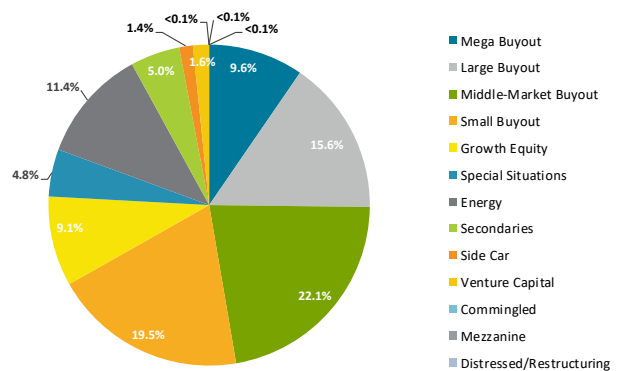


Buyout funds were the most active in terms of cash flow activity during second quarter of 2018. Buyout funds drew down US\$103.2 million or 59.7% of total contributions during the quarter, and distributed US\$230.7 million, or 66.8% of total distributions during the quarter.

Q2 2018 Contributed by Sub-Strategy



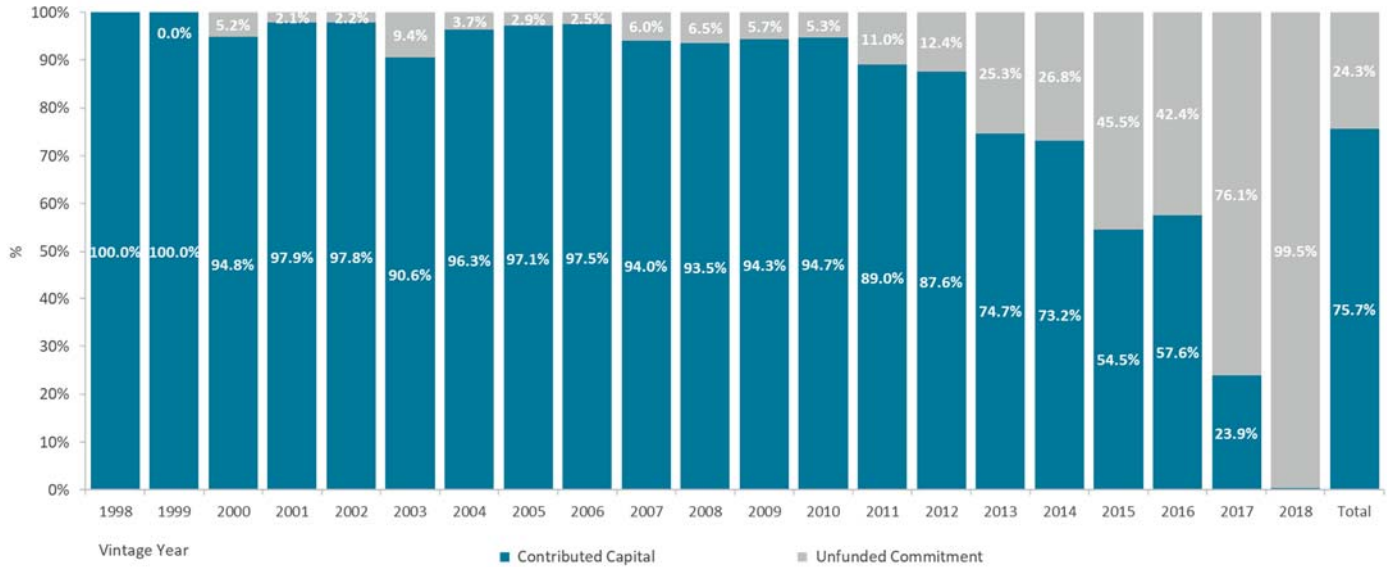
Q2 2018 Distributed by Sub-Strategy



### Invested Capital by Vintage Year

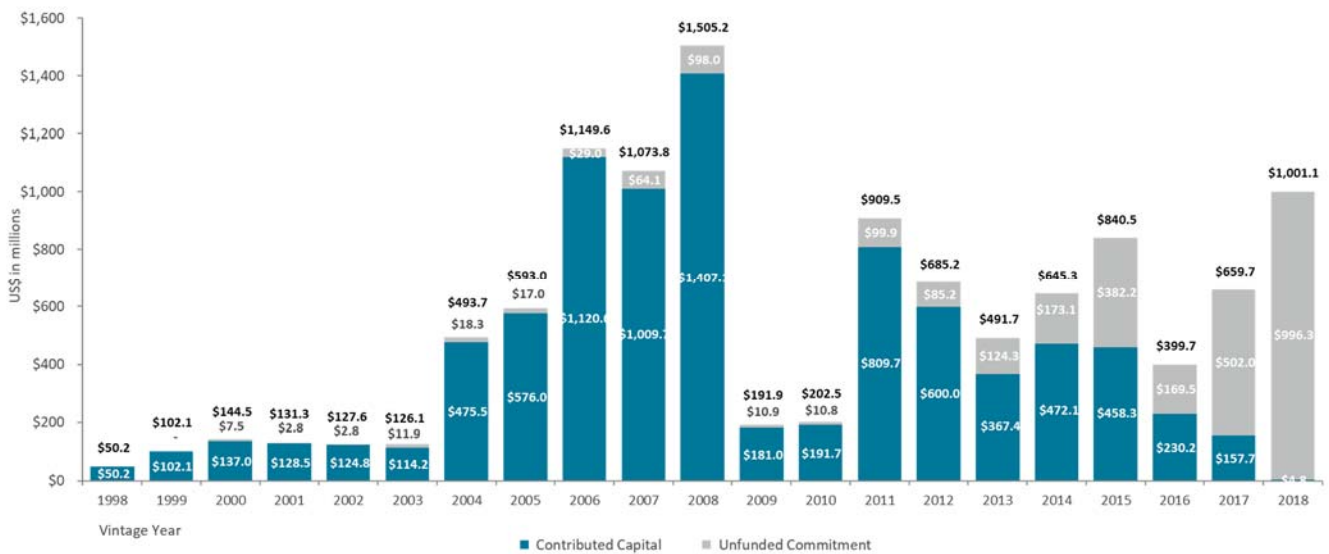
The following chart illustrates cumulative capital contributions as a percentage of total capital commitments, by fund vintage year, as of June 30, 2018.

**Capital Contributions to Unfunded by Vintage Year (%)**



The following chart illustrates cumulative capital contributions relative to unfunded commitment, by fund vintage year, as of June 30, 2018.

**Capital Contributions to Unfunded by Vintage Year (US\$)**



## Portfolio Company-Level Analysis

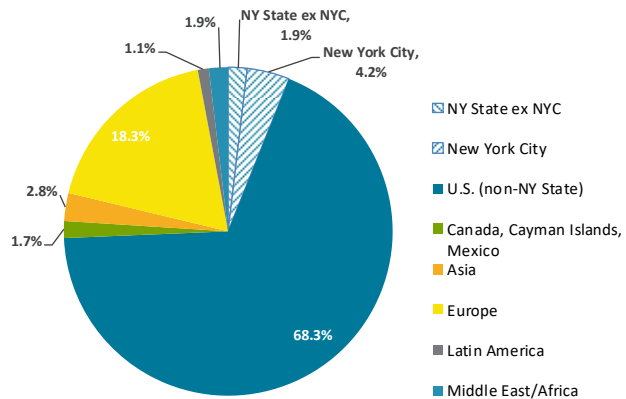
### Geographic Exposure

The following charts illustrate the Portfolio's current exposure by geography at the portfolio company level as of June 30, 2018. Please note that the geography is based upon the corporate headquarters of each portfolio company.

#### Geographic Exposure by Current Cost

As of June 30, 2018 (US\$ in millions)

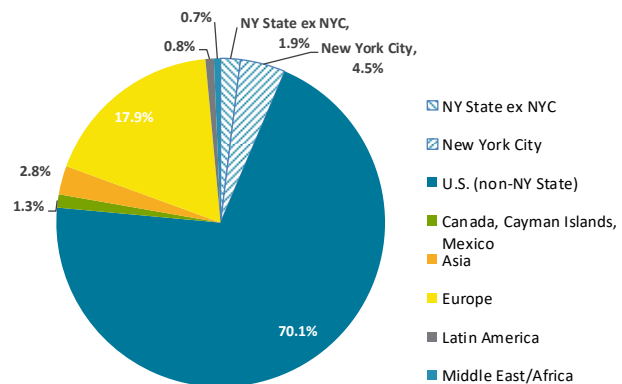
	Sum of Current Cost	% of Total
<b>North America</b>	<b>\$2,696.9</b>	<b>76.0%</b>
New York	214.2	6.0%
NY State ex NYC	65.7	1.9%
New York City	148.5	4.2%
U.S. (non-NY State)	2,423.9	68.3%
Canada, Cayman Islands, Mexico	58.8	1.7%
Asia	97.7	2.8%
Europe	648.4	18.3%
Latin America	38.1	1.1%
Middle East/Africa	67.0	1.9%
<b>Total</b>	<b>\$3,548.1</b>	<b>100.0%</b>



#### Geographic Exposure by Current Market Value

As of June 30, 2018 (US\$ in millions)

	Sum of Current Market Value	% of Total
<b>North America</b>	<b>\$4,241.3</b>	<b>77.8%</b>
New York	348.7	6.4%
NY State ex NYC	105.7	1.9%
New York City	243.0	4.5%
U.S. (non-NY State)	3,821.4	70.1%
Canada, Cayman Islands, Mexico	71.2	1.3%
Asia	153.5	2.8%
Europe	978.3	17.9%
Latin America	45.3	0.8%
Middle East/Africa	35.6	0.7%
<b>Total*</b>	<b>\$5,454.0</b>	<b>100.0%</b>



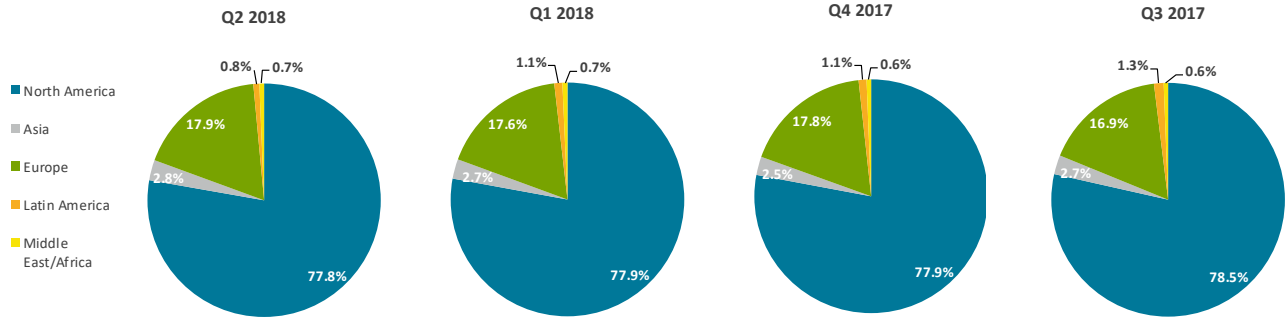
\* Total portfolio company market value will not equal the Portfolio's market value due to a fund's cash holding and rounding estimates.



### Geographic Exposure

The following charts illustrate the Portfolio's current exposure by geography at the portfolio company level for the most recent four quarters. Please note that the geography is based upon the corporate headquarters of each portfolio company.

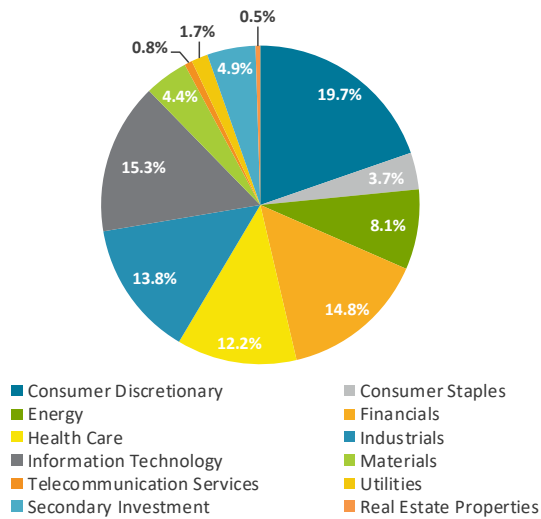
**Geographic Exposure by Current Market Value**



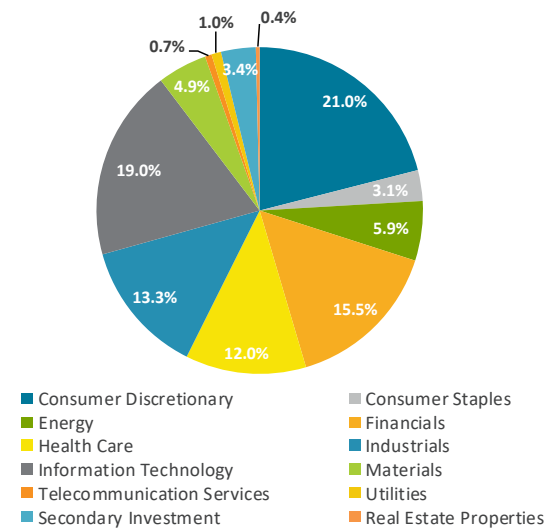
### Industry Exposure

The following charts illustrate the Portfolio's current exposure by industry at the portfolio company level as of June 30, 2018. Please note that the Financials category includes investments in various debt securities.

**Industry Exposure by Current Cost**



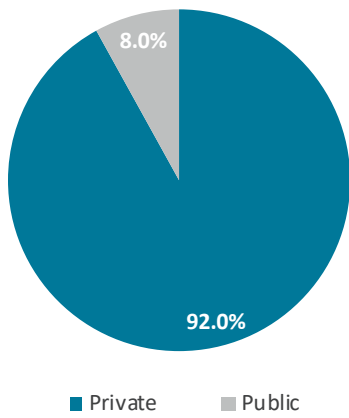
**Industry Exposure by Current Market Value**



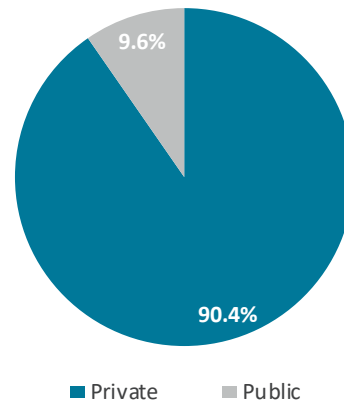
**Public Market Exposure**

As of quarter-end, publicly traded investments comprised 8.0% of the Portfolio's exposed cost and 9.6% of the Portfolio's exposed market value. The following charts illustrate the current public market exposure at the portfolio company level.

**Public Market Exposure by Current Cost**



**Public Market Exposure Current Market Value**



## IV. Appendix

**New York City Employees' Retirement System  
Private Equity Portfolio  
As of June 30, 2018 (in USD)**

Vintage Year	Investment	First Drawdown	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Multiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME Spread <sup>3</sup>
<b>Active Investments</b>										
1999	Cypress Merchant Banking Partners II, L.P.	3/29/1999	\$ 45,172,972	\$ 53,944,269	\$ 50,584,154	\$ 27,648	0.94x	(1.2%)	5.6%	(6.7%)
1999	Lincolnshire Equity Fund II, L.P.	10/20/1999	18,397,347	19,261,466	37,375,300	683,867	1.98x	24.6%	7.0%	17.6%
2000	Solera Partners, L.P.	5/26/2000	19,999,779	26,562,108	41,635,156	473,175	1.59x	7.6%	6.1%	1.4%
2000	SCP Private Equity Partners II, L.P.	6/15/2000	27,442,463	30,827,225	10,819,873	1,982,577	0.42x	(11.3%)	5.3%	(16.6%)
2001	Apollo Investment Fund V, L.P.	4/13/2001	40,000,000	62,528,643	123,248,630	671,503	1.98x	38.6%	8.4%	30.2%
2001	RRE Ventures III, L.P.	7/6/2001	19,999,999	26,323,260	34,078,940	1,307,017	1.34x	5.5%	6.6%	(1.1%)
2002	Thomas, McNerney & Partners, L.P.	10/9/2002	20,000,000	20,000,000	10,058,105	1,983,179	0.60x	(8.4%)	10.4%	(18.8%)
2002	Landmark Equity Partners XI, L.P.	10/23/2002	55,000,000	52,284,778	80,358,502	131,104	1.54x	23.3%	7.5%	15.9%
2003	FS Equity Partners V, L.P.	1/20/2003	25,000,000	21,419,958	41,861,469	1,759,231	2.04x	15.4%	4.9%	10.5%
2003	Blackstone Capital Partners IV, L.P.	2/26/2003	34,418,762	38,818,072	98,629,819	885,469	2.56x	39.7%	7.6%	32.1%
2003	Ares Corporate Opportunities Fund, L.P.	4/1/2003	45,000,000	53,984,770	80,476,920	2,516,689	1.54x	13.4%	7.5%	5.9%
2004	Markstone Capital Partners, LP	1/30/2004	40,000,000	46,899,103	19,822,611	272,215	0.43x	(48.6%)	20.3%	(68.9%)
2004	FdG Capital Partners II LP	8/30/2004	35,000,000	37,714,408	43,600,092	1,185,842	1.19x	3.4%	6.7%	(3.3%)
2004	Paladin Homeland Security Fund (NY City), L.P.	9/27/2004	15,000,000	16,513,285	6,211,471	110,713	0.38x	(14.2%)	6.3%	(20.5%)
2004	Lincolnshire Equity Fund III, L.P.	10/1/2004	55,000,000	54,737,849	77,732,618	21,427,123	1.31x	28.8%	11.3%	17.5%
2004	Yucaipa American Alliance Fund I, LP	10/1/2004	90,000,000	114,094,892	95,624,614	42,300,553	1.21x	4.1%	10.7%	(6.6%)
2004	New York/Fairview Emerging Managers Fund, L.P.-Tranche 1	10/21/2004	32,000,000	32,862,069	29,751,189	8,316,884	1.16x	2.5%	8.7%	(6.2%)
2004	Aurora Equity Partners III L.P.	11/16/2004	50,000,000	54,126,788	87,435,881	376,763	1.62x	13.5%	9.9%	3.6%
2004	Trilantic Capital Partners III L.P.	11/18/2004	45,088,848	39,896,989	59,922,935	112,677	1.50x	12.4%	4.9%	7.5%
2005	Palladium Equity Partners III, L.P.	11/12/2004	35,000,000	36,318,404	67,048,505	6,028,290	2.01x	16.7%	11.9%	4.8%
2005	New Mountain Partners II, L.P.	1/12/2005	46,451,615	42,071,397	81,045,604	1,648,065	1.97x	13.8%	4.6%	9.2%
2005	VSS Communications Partners IV, L.P.	3/14/2005	24,690,337	28,434,380	21,012,981	42,350	0.74x	(5.1%)	7.6%	(12.7%)
2005	Prism Venture Partners V-A, L.P.	7/14/2005	30,000,000	30,762,722	19,062,102	444,167	0.63x	(8.8%)	8.3%	(17.1%)
2005	NB New York City Growth Fund	8/16/2005	34,819,694	34,819,694	36,646,515	-	1.05x	(0.7%)	3.7%	(4.4%)
2005	Snow Phipps Group, L.P.	9/7/2005	20,000,000	23,827,483	20,892,466	9,544,036	1.81x	5.7%	11.1%	(5.4%)
2005	GI Partners Fund II L.P.	9/26/2005	35,000,000	35,453,490	56,981,934	53,891	1.61x	7.7%	5.6%	2.1%
2005	Blackstone Mezzanine Partners II, L.P.	10/10/2005	21,346,698	23,488,553	31,752,958	298,643	1.36x	8.0%	3.8%	4.2%
2005	Psilos Group Partners III, L.P.	10/24/2005	35,000,000	37,205,819	17,948,760	22,410,479	1.08x	1.4%	7.3%	(6.0%)
2005	USPF II Institutional Fund, L.P.	11/23/2005	65,000,000	85,734,194	82,299,936	28,270,575	1.29x	4.4%	7.7%	(3.3%)
2005	JP Morgan Fleming (Tranche A)	12/21/2005	43,000,000	42,480,963	39,191,747	17,013,869	1.32x	5.4%	10.8%	(5.4%)
2006	Aisling Capital II, LP	1/12/2006	6,680,102	7,853,301	6,821,024	1,101,437	1.01x	0.2%	8.1%	(8.0%)
2006	InterMedia Partners VII, L.P.	1/20/2006	25,000,000	29,198,197	29,591,747	1,706,477	1.07x	1.1%	9.9%	(8.8%)
2006	Terra Firma Capital Partners III, L.P.	3/8/2006	52,778,181	53,467,890	14,509,035	9,345,844	0.45x	(10.2%)	9.7%	(19.9%)
2006	BDCM Opportunity Fund II, L.P.	3/29/2006	25,000,000	37,160,726	58,739,441	27,961,501	2.33x	17.5%	11.4%	6.2%
2006	Blackstone Capital Partners V, L.P.	4/13/2006	121,624,827	129,317,991	200,388,311	11,981,674	1.64x	8.1%	8.4%	(0.3%)
2006	Avista Capital Partners, L.P.	4/27/2006	45,000,000	59,165,902	72,036,625	1,612,991	1.24x	4.6%	6.4%	(1.8%)
2006	GSC Recovery III, L.P.	5/4/2006	25,000,000	28,228,414	33,208,011	269,413	1.19x	4.3%	6.8%	(2.5%)
2006	Apollo Investment Fund VI, L.P.	5/10/2006	90,000,000	115,838,240	155,713,859	19,102,053	1.51x	8.8%	7.6%	1.1%
2006	Landmark Equity Partners XIII, L.P.	5/11/2006	50,000,000	47,997,218	49,687,368	12,245,399	1.29x	5.2%	6.5%	(1.3%)
2006	Ares Corporate Opportunities Fund II, L.P.	5/23/2006	50,000,000	54,760,870	88,267,769	3,556,905	1.68x	13.2%	3.9%	9.3%
2006	Fairview Ventures Fund III, L.P.	6/29/2006	25,000,000	26,284,335	29,578,013	22,178,989	1.97x	13.8%	12.6%	1.2%
2006	Ampersand 2006	8/14/2006	25,000,000	25,000,000	41,455,039	23,437,190	2.60x	16.1%	9.0%	7.1%
2006	CCMP Capital Investors II, L.P.	8/17/2006	30,000,000	32,911,805	56,364,117	302,604	1.72x	13.5%	10.5%	3.0%
2006	CLP 2014 (fka Perseus Partners VII)	8/31/2006	30,000,000	35,099,499	13,800,530	(35,007)	0.39x	(20.8%)	12.4%	(33.2%)
2006	Thomas, McNerney & Partners II, L.P.	11/30/2006	25,000,000	25,349,167	49,944,019	4,730,775	2.16x	16.3%	11.5%	4.7%
2006	Catterton Partners VI, L.P.	12/14/2006	45,000,000	51,243,868	72,559,948	23,674,408	1.88x	12.1%	8.9%	3.1%
2006	First Reserve Fund XI, L.P.	12/14/2006	45,000,000	47,820,682	29,053,614	3,038,180	0.67x	(8.9%)	6.2%	(15.0%)
2006	Arsenal Capital Partners II, LP	12/19/2006	22,500,000	27,276,973	36,293,108	12,240,931	1.78x	11.2%	11.9%	(0.7%)
2006	RRE Ventures IV, L.P.	12/19/2006	35,000,000	44,063,397	24,528,820	42,176,684	1.51x	6.5%	11.1%	(4.7%)
2006	MidOcean Partners III, L.P.	12/21/2006	58,234,777	69,283,446	120,727,591	20,369,225	2.04x	13.0%	9.8%	3.2%
2006	GF Capital Private Equity Fund, L.P.	12/22/2006	20,000,000	20,716,299	26,087,171	12,167,184	1.85x	13.6%	12.6%	1.0%
2006	The Fourth Civen Fund	1/22/2007	69,252,088	72,910,838	105,001,759	319,527	1.44x	7.4%	7.5%	(0.2%)
2007	Pegasus Partners IV, L.P.	1/29/2007	30,000,000	36,210,832	23,854,519	11,202,470	0.97x	(0.6%)	11.2%	(11.9%)
2007	FTVentures III, LP	3/1/2007	24,201,990	26,802,873	46,944,173	9,771,401	2.12x	15.9%	10.1%	5.8%
2007	Co-Investment Partners Europe, L.P.	3/19/2007	39,881,878	42,506,558	49,511,763	4,669,217	1.27x	4.8%	15.4%	(10.6%)
2007	Montreux Equity Partners IV, L.P.	3/27/2007	20,000,000	20,000,000	11,044,696	17,764,832	1.44x	6.0%	10.7%	(4.7%)
2007	Quaker BioVentures II, L.P.	3/30/2007	20,000,000	19,058,740	15,700,278	6,526,249	1.17x	3.7%	12.7%	(9.1%)
2007	SCP Vitalife Partners II Fund	4/13/2007	20,000,000	20,099,698	1,579	9,596,534	0.48x	(9.9%)	9.0%	(18.9%)
2007	Craton Equity Investors I, L.P.	4/30/2007	20,000,000	20,089,805	2,153,907	260,199	0.12x	(30.5%)	16.4%	(46.9%)
2007	Nautic Partners VI, L.P.	5/14/2007	30,000,000	33,794,398	70,848,915	8,924,951	2.36x	19.0%	12.1%	7.0%
2007	Constellation Venture Capital III, L.P.	5/22/2007	25,000,000	28,575,035	13,995,719	8,150,797	0.78x	(4.4%)	16.4%	(20.8%)
2007	United States Power Fund III, L.P.	6/28/2007	65,000,000	76,903,642	77,120,314	23,164,692	1.30x	4.9%	9.2%	(4.3%)
2007	Halyard Capital Fund II, L.P.	7/2/2007	25,000,000	21,505,407	26,003,376	4,871,304	1.44x	6.7%	9.9%	(3.2%)
2007	Carlyle Partners V, L.P.	7/6/2007	70,000,000	72,142,215	114,409,355	13,509,189	1.77x	13.8%	11.0%	2.9%
2007	PCG Clean Energy & Technology Fund (East), LLC	7/6/2007	90,000,000	81,429,594	14,013,084	26,120,696	0.49x	(10.4%)	13.3%	(23.6%)
2007	GSO Capital Opportunities Fund LP	7/16/2007	45,000,000	67,377,298	95,627,284	1,086,900	1.44x	17.5%	10.2%	7.2%

**New York City Employees' Retirement System  
Private Equity Portfolio  
As of June 30, 2018 (in USD)**

Vintage Year	Investment	First Drawdown	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Multiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME Spread <sup>3</sup>
2007	StarVest Partners II, L.P.	8/1/2007	25,000,000	25,051,830	5,254,221	15,199,192	0.82x	(3.3%)	14.3%	(17.6%)
2007	New Mountain Partners III, L.P.	8/9/2007	100,000,000	101,697,235	130,503,404	64,969,283	1.92x	13.2%	12.8%	0.4%
2007	Vista Equity Partners Fund III, L.P.	10/3/2007	30,000,000	32,008,969	73,920,673	8,378,057	2.57x	27.5%	10.1%	17.3%
2007	Trilantic Capital Partners IV L.P.	10/22/2007	69,028,637	72,022,699	106,245,500	9,497,253	1.61x	14.1%	11.1%	3.0%
2007	RLJ Equity Partners Fund I, L.P.	11/30/2007	20,000,000	21,774,503	22,531,306	15,642,090	1.75x	12.6%	14.0%	(1.4%)
2007	Pine Brook Capital Partners, L.P.	1/11/2008	30,000,000	33,749,906	38,661,282	6,467,172	1.34x	7.9%	12.2%	(4.2%)
2008	Paladin III (NY City), L.P.	1/8/2008	30,000,000	39,598,771	28,239,981	28,353,522	1.43x	8.0%	12.3%	(4.3%)
2008	Relativity Fund, L.P.	1/17/2008	10,877,829	10,773,614	5,272,425	122,969	0.50x	(10.8%)	11.2%	(21.9%)
2008	Apollo Investment Fund VII, L.P.	1/28/2008	100,000,000	120,427,987	187,623,960	23,576,078	1.75x	23.4%	13.6%	9.8%
2008	NGN BioMed Opportunity II, L.P.	2/11/2008	20,000,000	19,151,821	7,946,209	12,433,104	1.06x	1.0%	15.1%	(14.1%)
2008	Carpenter Community BancFund-A, L.P.	2/12/2008	20,000,000	19,569,498	29,600,992	4,001,333	1.72x	8.5%	15.1%	(6.5%)
2008	Riverstone/Carlyle Global Energy & Power Fund IV, L.P.	3/3/2008	45,000,000	50,751,701	40,550,843	21,453,998	1.22x	5.4%	14.0%	(8.6%)
2008	Yucaipa American Alliance Fund II, LP	3/28/2008	120,000,000	163,744,290	97,293,704	157,842,032	1.56x	9.1%	12.6%	(3.5%)
2008	Levine Leichtman Capital Partners IV, L.P.	4/8/2008	35,000,000	37,384,126	52,817,272	13,561,627	1.75x	19.7%	14.4%	5.3%
2008	Lee Equity Partners Fund, L.P.	4/23/2008	36,779,895	50,519,026	61,415,282	211,294	1.22x	6.3%	13.4%	(7.0%)
2008	New York/Fairview Emerging Managers Fund, L.P.-Tranche 2	5/28/2008	45,000,000	44,397,265	36,288,530	41,891,218	1.76x	14.4%	13.5%	0.9%
2008	Yucaipa Corporate Initiatives Fund II, LP	6/23/2008	42,092,788	41,094,236	12,669,673	25,958,434	0.94x	(1.0%)	11.4%	(12.4%)
2008	Leeds Equity Partners V, L.P.	7/28/2008	60,000,000	57,812,601	58,038,076	56,810,327	1.99x	17.5%	13.9%	3.6%
2008	GI Partners Fund III L.P.	7/29/2008	45,000,000	48,592,079	70,014,239	6,504,638	1.57x	13.2%	15.4%	(2.3%)
2008	Ares Corporate Opportunities Fund III, L.P.	7/30/2008	75,000,000	90,326,274	126,701,097	71,876,417	2.20x	22.0%	12.5%	9.5%
2008	GCM Grosvenor NYCERS Emerging Manager Fund, L.P.	8/22/2008	116,737,374	137,734,099	114,107,303	78,636,866	1.40x	10.6%	13.8%	(3.2%)
2008	First Reserve Fund XII, L.P.	8/25/2008	45,000,000	49,204,883	24,517,527	8,596,413	0.67x	(9.4%)	16.6%	(26.0%)
2008	Landmark Equity Partners XIV, L.P.	9/19/2008	109,120,000	105,682,830	110,407,371	27,503,223	1.30x	9.9%	14.6%	(4.7%)
2008	Crestview Partners II, L.P.	10/1/2008	50,000,000	56,212,339	65,438,059	33,504,073	1.76x	14.5%	14.8%	(0.3%)
2008	Avista Capital Partners II, L.P.	11/5/2008	75,000,000	97,206,003	150,159,298	25,289,896	1.80x	16.5%	14.7%	1.8%
2008	Blue Wolf Capital Fund II, L.P.	11/14/2008	25,000,000	27,167,904	27,909,784	9,536,912	1.38x	7.8%	15.8%	(8.0%)
2008	Bridgepoint Europe IV	11/14/2008	26,660,643	26,766,098	27,050,911	15,098,767	1.57x	11.2%	15.1%	(3.9%)
2008	Aisling Capital III, LP	11/20/2008	14,000,000	15,763,550	21,598,755	13,384,956	2.22x	25.9%	14.4%	11.5%
2008	Onex Partners III LP	12/10/2008	75,000,000	81,578,819	102,042,274	42,222,124	1.77x	14.3%	15.0%	(0.7%)
2009	Welsh, Carson, Anderson & Stowe XI, L.P.	2/10/2009	40,000,000	40,000,000	44,396,071	22,508,835	1.67x	13.2%	14.8%	(1.6%)
2009	FS Equity Partners VI, L.P.	7/27/2009	32,500,000	32,555,205	62,473,687	39,351,928	3.13x	26.0%	14.9%	11.2%
2009	Lincolnshire Equity Fund IV, L.P.	8/5/2009	27,500,000	29,035,346	25,012,835	20,349,467	1.56x	11.6%	13.8%	(2.3%)
2009	Lexington Capital Partners VII, L.P.	12/3/2009	50,000,000	44,200,303	52,103,646	16,376,165	1.55x	14.4%	14.6%	(0.2%)
2010	Snow Phipps II, L.P.	1/8/2010	30,000,000	33,154,519	23,881,598	20,221,473	1.33x	9.6%	14.2%	(4.6%)
2010	JP Morgan Fleming (Tranche B)	2/26/2010	35,000,000	35,272,355	20,076,064	29,627,191	1.41x	8.7%	13.9%	(5.1%)
2010	Trident V, L.P.	4/29/2010	110,000,000	123,304,556	97,604,809	97,594,764	1.58x	11.4%	12.8%	(1.4%)
2011	Blackstone Capital Partners VI, L.P.	1/24/2011	120,000,000	122,806,888	66,269,215	126,644,084	1.57x	14.4%	13.2%	1.2%
2011	Ampersand 2011	3/11/2011	25,000,000	25,000,000	29,457,057	33,935,754	2.54x	21.2%	13.4%	7.7%
2011	BDCM Opportunity Fund III, L.P.	4/8/2011	45,000,000	60,142,246	20,728,277	59,337,536	1.33x	8.8%	13.1%	(4.3%)
2011	AXA Secondary Fund V B L.P.	6/16/2011	120,000,000	98,289,407	135,473,060	25,339,809	1.64x	16.6%	14.9%	1.7%
2011	Wellspring Capital Partners V, L.P.	7/1/2011	40,000,000	40,305,719	43,967,635	17,766,628	1.53x	16.0%	12.6%	3.4%
2011	EQT VI, L.P.	8/1/2011	106,153,491	109,735,801	96,805,710	90,659,142	1.71x	15.4%	12.7%	2.7%
2011	Pegasus Partners V, L.P.	8/16/2011	20,789,916	23,877,216	15,051,753	25,548,000	1.70x	15.1%	15.0%	0.2%
2011	BC European Capital IX	9/19/2011	131,448,163	140,711,317	88,086,537	112,213,560	1.42x	11.7%	14.0%	(2.3%)
2011	American Securities Partners VI, L.P.	11/18/2011	80,000,000	85,737,419	122,590,988	39,534,162	1.89x	22.3%	13.5%	8.8%
2011	Vista Equity Partners Fund IV, L.P.	11/30/2011	100,000,000	103,049,618	117,335,988	81,749,988	1.93x	19.0%	13.8%	5.1%
2012	Warburg Pincus Private Equity XI, L.P.	5/24/2012	110,000,000	117,033,488	71,662,752	108,028,485	1.54x	14.9%	13.0%	1.9%
2012	Trilantic Capital Partners V L.P.	9/20/2012	70,000,000	72,068,087	54,816,759	51,557,739	1.48x	19.4%	12.9%	6.5%
2012	Palladium Equity Partners IV, L.P.	10/10/2012	55,000,000	44,306,372	24,355,205	40,940,801	1.47x	15.1%	14.0%	1.2%
2012	Ares Corporate Opportunities Fund IV, L.P.	11/5/2012	125,000,000	126,511,836	66,557,047	112,180,419	1.41x	13.4%	11.6%	1.8%
2012	Green Equity Investors VI, L.P.	11/30/2012	120,000,000	128,300,416	74,496,178	125,730,779	1.56x	16.6%	12.8%	3.8%
2012	Platinum Equity Capital Partners III, L.P.	1/14/2013	100,000,000	82,294,117	85,689,852	73,298,070	1.93x	41.3%	13.9%	27.5%
2012	NYCERS - 2012 Emerging Manager Program <sup>4</sup>	6/21/2013	139,600,000	125,825,713	37,275,473	137,365,819	1.39x	14.9%	12.1%	2.8%
2013	Carlyle Partners VI, L.P.	7/3/2013	75,000,000	77,492,043	27,110,150	72,356,225	1.28x	13.3%	12.1%	1.3%
2014	Carlyle Partners VI, L.P. (Side Car)	9/23/2014	8,250,000	5,875,005	315,288	6,048,901	1.08x	3.3%	12.0%	(8.7%)
2013	Landmark Equity Partners XV, L.P.	10/30/2013	75,000,000	50,370,249	28,176,676	35,793,917	1.27x	14.8%	12.1%	2.7%
2013	Apollo Investment Fund VIII, L.P.	12/11/2013	140,000,000	119,721,058	32,090,796	125,802,900	1.32x	15.4%	13.0%	2.4%
2013	Landmark - NYC Fund I, L.P.	12/24/2013	25,000,000	20,043,953	9,606,569	18,719,312	1.41x	18.6%	10.6%	8.0%
2014	CVC Capital Partners VI, L.P.	2/18/2014	123,890,161	107,617,231	17,844,854	115,451,021	1.24x	13.0%	12.9%	0.1%
2013	Crestview Partners III, L.P.	3/3/2015	66,000,000	28,449,427	5,101,711	29,970,315	1.23x	10.9%	12.6%	(1.7%)
2013	Crestview Partners III (Co-Investment B), L.P.	12/17/2015	22,000,000	16,704,736	1,083,292	18,448,169	1.17x	9.6%	15.4%	(5.8%)
2014	Olympus Growth Fund VI, L.P.	1/21/2014	75,000,000	53,009,662	17,430,727	56,075,830	1.39x	19.0%	14.5%	4.5%
2014	ASF VI B L.P.	5/9/2014	83,000,000	53,666,607	22,175,553	53,496,120	1.41x	14.4%	12.1%	2.3%
2014	ASF VI B NYC Co-Invest L.P.	5/9/2014	27,000,000	19,969,085	13,149,532	14,844,274	1.40x	14.4%	9.4%	5.0%
2014	Vista Equity Partners Fund V, L.P.	9/8/2014	125,000,000	126,855,788	28,038,003	188,586,595	1.71x	22.6%	12.4%	10.2%
2014	Lexington Capital Partners VIII, L.P.	1/8/2015	110,000,000	63,400,114	25,512,794	63,761,681	1.41x	28.8%	13.8%	15.0%
2015	Siris Partners III, L.P.	5/4/2015	31,000,000	21,644,122	1,343,052	26,911,503	1.31x	18.2%	14.1%	4.1%
2015	Centerbridge Capital Partners III, L.P.	5/21/2015	23,700,000	12,906,821	2,595,810	13,331,697	1.23x	13.3%	12.9%	0.4%
2015	Welsh, Carson, Anderson & Stowe XII, L.P.	8/26/2015	78,500,000	47,594,193	9,275,331	54,263,585	1.34x	21.0%	15.0%	6.0%
2015	Warburg Pincus Private Equity XII, L.P.	12/21/2015	205,500,000	108,897,547	3,020,850	122,606,085	1.15x	12.4%	14.9%	(2.5%)

**New York City Employees' Retirement System  
Private Equity Portfolio  
As of June 30, 2018 (in USD)**

Vintage Year	Investment	First Drawdown	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Multiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME Spread <sup>3</sup>
2015	ASF VII B L.P.	12/29/2015	94,500,000	27,305,007	462,593	34,340,367	1.27x	23.9%	14.0%	9.8%
2015	ASF VII B NYC Co-Invest L.P.	12/29/2015	46,000,000	22,308,913	-	33,858,534	1.52x	94.2%	9.6%	84.6%
2015	EQT VII, L.P.	1/8/2016	163,375,272	106,205,368	8,077,726	124,876,710	1.25x	17.6%	15.6%	2.0%
2015	American Securities Partners VII, L.P.	1/19/2016	80,000,000	45,093,757	1,133,185	48,216,981	1.09x	8.2%	15.4%	(7.2%)
2015	Bridgepoint Europe V L.P.	2/8/2016	62,139,653	43,521,348	5,959,601	49,270,043	1.27x	21.0%	16.8%	4.2%
2015	Bridgepoint Europe V Co-Invest	8/16/2016	18,368,732	14,453,317	-	20,038,842	1.39x	NM	NM	N/A
2015	NYCERS - 2015 Emerging Manager Program <sup>5</sup>	2/22/2016	190,400,000	29,907,289	1,860,624	34,228,276	1.21x	26.6%	14.2%	12.4%
2016	Vista Equity Partners Fund VI, L.P.	6/28/2016	158,000,000	115,494,294	378,662	128,576,321	1.12x	8.6%	16.0%	(7.4%)
2016	Platinum Equity Capital Partners IV, L.P.	3/21/2017	111,000,000	58,495,566	5,745,609	64,868,112	1.21x	NM	NM	N/A
2018	Platinum Equity Capital Partners IV Co-Investment, L.P.	9/7/2018	16,000,000	-	-	-	-	N/A	N/A	N/A
2016	Apax IX USD, L.P.	5/12/2017	127,000,000	56,233,233	1,204,490	61,067,944	1.11x	NM	NM	N/A
2017	Green Equity Investors VII, L.P.	5/12/2017	95,000,000	35,315,703	376,189	35,466,878	1.01x	NM	NM	N/A
2017	Ares Corporate Opportunities Fund V, L.P.	6/22/2017	95,000,000	32,129,288	1,290,266	30,747,458	1.00x	NM	NM	N/A
2017	KKR Americas Fund XII, L.P.	10/31/2017	158,000,000	22,387,376	-	22,376,764	1.00x	NM	NM	N/A
2017	BC European Capital X	12/14/2017	91,238,982	22,141,443	-	20,430,537	0.92x	NM	NM	N/A
2017	BCEC X Co-Investment	3/24/2017	36,369,414	10,715,583	-	10,317,525	0.96x	NM	NM	N/A
2017	Warburg Pincus Financial Sector, L.P.	1/5/2018	104,000,000	16,479,156	5,304,000	10,004,647	0.93x	NM	NM	N/A
2018	Platinum Equity Small Cap Fund, L.P.	6/27/2018	41,000,000	1,771,200	-	1,525,104	0.86x	NM	NM	N/A
2018	EQT VIII, L.P.	N/A	113,756,175	-	-	-	-	N/A	N/A	N/A
2018	EQT VIII Co-Investment	N/A	41,365,882	-	-	-	-	N/A	N/A	N/A
2018	Apollo Investment Fund IX, L.P.	N/A	256,000,000	-	-	(841,887)	-	NM	NM	N/A
2018	Bridgepoint Europe VI	N/A	124,256,745	-	-	-	-	N/A	N/A	N/A
2018	Bridgepoint Europe VI Co-Invest	N/A	31,064,186	-	-	-	-	N/A	N/A	N/A
2018	Crestview Partners IV, L.P.	N/A	71,000,000	-	-	-	-	N/A	N/A	N/A
2018	Crestview Partners IV (Co-Investment), L.P.	N/A	23,666,667	-	-	-	-	N/A	N/A	N/A
2018	CVC Capital Partners VII, L.P.	N/A	159,842,010	-	-	1,333,901	-	NM	NM	N/A
2018	Siris Partners IV, L.P.	N/A	89,000,000	-	-	-	-	N/A	N/A	N/A
<b>Total Portfolio<sup>6</sup></b>			<b>\$ 10,433,763,619</b>	<b>\$ 8,718,684,470</b>	<b>\$ 7,914,301,769</b>	<b>\$ 4,664,847,099</b>	<b>1.44x</b>	<b>9.9%</b>	<b>10.4%</b>	<b>(0.5%)</b>

<sup>1</sup> Performance for funds with less than eight (8) quarters of activity is not meaningful.

<sup>2</sup> Russell 3000 PME+ or Long-Nickels PME for investments with no distributed capital as of quarter-end.

<sup>3</sup> PME Spread is calculated as IRR minus PME Benchmark.

<sup>4</sup> NYCERS - 2012 Emerging Manager Program total commitment amount of \$139.6 million has been fully committed as of June 30, 2015.

<sup>5</sup> NYCERS - 2015 Emerging Manager Program total commitment amount includes the full amount allocated to the Program, of which \$158.8 million has been committed as of November 21, 2018.

<sup>6</sup> Total Portfolio includes liquidated investments.

Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve comparable results or avoid substantial losses.

Note: IRRs presented are interim estimates and may not be indicative of the ultimate performance of fund investments due to a number of factors, such as the lack of industry valuation standards and the differences in the investment pace and strategy of various funds. Until a fund is liquidated, typically over 10 to 12 years, the IRR is only an interim estimated return. The IRR calculated in early years of a fund is not meaningful given the J-curve effect. The actual IRR performance of any fund is not known until all capital contributed and earnings have been distributed to the investor. The IRRs contained in this report are calculated by StepStone Group LP ("StepStone"), a consultant to the New York City Employees' Retirement System, based on information provided by the general partners (e.g. cash flows and valuations). The IRR calculations and other information contained in this report have not been reviewed or confirmed by the general partners. The result of the IRR calculation may differ from that generated by the general partner or other limited partners. Differences in IRR calculations can be affected by cash-flow timing, the accounting treatment of carried interest, fund management fees, advisory fees, organizational fees, other fund expenses, sale of distributed stock, and valuations.

**New York City Employees' Retirement System  
 Subsequent Commitments  
 As of June 30, 2018 (in USD)**

Vintage Year	Investment	First Drawdown	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Multiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME Spread <sup>3</sup>
<b>Commitments Closed Subsequent to as of Date</b>										
2018	Raine Partners III, LP	N/A	\$ 26,000,000	\$ -	\$ -	\$ -	N/A	N/A	N/A	N/A
2018	Welsh, Carson, Anderson & Stowe XIII, L.P.	N/A	89,000,000	-	-	-	N/A	N/A	N/A	N/A
2018	Vista Equity Partners Fund VII, L.P.	N/A	177,500,000	-	-	-	N/A	N/A	N/A	N/A
2018	KKR European Fund V (USD) SCSp	N/A	83,250,000	-	-	-	N/A	N/A	N/A	N/A
<b>Total Commitments Closed Subsequent to as of Date</b>			<b>\$ 375,750,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup> Performance for funds with less than eight (8) quarters of activity is not meaningful.

<sup>2</sup> Russell 3000 PME+

<sup>3</sup> PME Spread is calculated as IRR minus PME Benchmark.

Note: IRRs presented are interim estimates and may not be indicative of the ultimate performance of fund investments due to a number of factors, such as the lack of industry valuation standards and the differences in the investment pace and strategy of various funds. Until a fund is liquidated, typically over 10 to 12 years, the IRR is only an interim estimated return. The IRR calculated in early years of a fund is not meaningful given the J-curve effect. The actual IRR performance of any fund is not known until all capital contributed and earnings have been distributed to the investor. The IRRs contained in this report are calculated by StepStone Group LP ("StepStone"), a consultant to the New York City Employees' Retirement System, based on information provided by the general partners (e.g. cash flows and valuations). The IRR calculations and other information contained in this report have not been reviewed or confirmed by the general partners. The result of the IRR calculation may differ from that generated by the general partner or other limited partners. Differences in IRR calculations can be affected by cash-flow timing, the accounting treatment of carried interest, fund management fees, advisory fees, organizational fees, other fund expenses, sale of distributed stock, and valuations.

New York City Employees' Retirement System  
Private Equity Portfolio  
As of June 30, 2018 (in USD)

Vintage Year	Investment	First Drawdown	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Multiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME Spread <sup>3</sup>
<b>Active Investments</b>										
1999	Cypress Merchant Banking Partners II, L.P.	3/29/1999	\$ 45,172,972	\$ 53,944,269	\$ 50,584,154	\$ 27,648	0.94x	(1.2%)	5.6%	(6.7%)
1999	Lincolnshire Equity Fund II, L.P.	10/20/1999	18,397,347	19,261,466	37,375,300	683,867	1.98x	24.6%	7.0%	17.6%
2000	Solera Partners, L.P.	5/26/2000	19,999,779	26,562,108	41,635,156	473,175	1.59x	7.6%	6.1%	1.4%
2000	SCP Private Equity Partners II, L.P.	6/15/2000	27,442,463	30,827,225	10,819,873	1,982,577	0.42x	(11.3%)	5.3%	(16.6%)
2001	Apollo Investment Fund V, L.P.	4/13/2001	40,000,000	62,528,643	123,248,630	671,503	1.98x	38.6%	8.4%	30.2%
2001	RRE Ventures III, L.P.	7/6/2001	19,999,999	26,323,260	34,078,940	1,307,017	1.34x	5.5%	6.6%	(1.1%)
2002	Thomas, McNeerney & Partners, L.P.	10/9/2002	20,000,000	20,000,000	10,058,105	1,983,179	0.60x	(8.42%)	10.4%	(18.8%)
2002	Landmark Equity Partners XI, L.P.	10/23/2002	55,000,000	52,284,778	80,358,502	131,104	1.54x	23.3%	7.5%	15.9%
2003	FS Equity Partners V, L.P.	1/20/2003	25,000,000	21,419,958	41,861,469	1,759,231	2.04x	15.4%	4.9%	10.5%
2003	Blackstone Capital Partners IV, L.P.	2/26/2003	34,418,762	38,818,072	98,629,819	885,469	2.56x	39.7%	7.6%	32.1%
2003	Ares Corporate Opportunities Fund, L.P.	4/1/2003	45,000,000	53,984,770	80,476,920	2,516,689	1.54x	13.4%	7.5%	5.9%
2004	Markstone Capital Partners, LP	1/30/2004	40,000,000	46,899,103	19,822,611	272,215	0.43x	(48.6%)	20.3%	(68.9%)
2004	FDG Capital Partners II LP	8/30/2004	35,000,000	37,714,408	43,600,092	1,185,842	1.19x	3.4%	6.7%	(3.3%)
2004	Paladin Homeland Security Fund (NY City), L.P.	9/27/2004	15,000,000	16,513,285	6,211,471	110,713	0.38x	(14.2%)	6.3%	(20.5%)
2004	Lincolnshire Equity Fund III, L.P.	10/1/2004	55,000,000	54,767,849	77,732,618	21,427,123	1.81x	28.8%	11.3%	17.5%
2004	Yucaipa American Alliance Fund I, LP	10/1/2004	90,000,000	114,094,892	95,624,614	42,300,553	1.21x	4.1%	10.7%	(6.6%)
2004	New York/Fairview Emerging Managers Fund, L.P.-Tranche 1	10/21/2004	32,000,000	32,862,069	29,751,189	8,316,884	1.16x	2.5%	8.7%	(6.2%)
2004	Aurora Equity Partners III, L.P.	11/16/2004	50,000,000	54,126,788	87,435,881	376,763	1.62x	13.5%	9.9%	3.6%
2004	Trilantic Capital Partners III L.P.	11/18/2004	45,088,848	39,896,989	59,922,935	112,677	1.50x	12.4%	4.9%	7.5%
2005	Palladium Equity Partners II, L.P.	11/12/2004	35,000,000	36,318,404	67,048,505	6,028,290	2.01x	16.7%	11.9%	4.8%
2005	New Mountain Partners II, L.P.	1/12/2005	46,451,615	42,071,397	81,045,604	1,648,065	1.97x	13.8%	6.6%	9.2%
2005	VSS Communications Partners IV, L.P.	3/14/2005	24,690,337	28,434,380	21,012,981	42,350	0.74x	(5.1%)	7.6%	(12.7%)
2005	Prism Venture Partners V-A, L.P.	7/14/2005	30,000,000	30,762,722	19,062,102	444,167	0.63x	(8.8%)	8.3%	(17.1%)
2005	NB New York City Growth Fund	8/16/2005	34,819,694	34,819,694	36,646,515	-	1.05x	(0.7%)	3.7%	(4.4%)
2005	New Phipps Group, L.P.	9/7/2005	20,000,000	20,892,466	20,892,466	9,544,036	1.28x	5.7%	11.1%	(5.4%)
2005	GI Partners Fund II L.P.	9/26/2005	35,000,000	35,453,490	56,981,934	53,891	1.61x	7.7%	5.6%	2.1%
2005	Blackstone Mezzanine Partners II, L.P.	10/10/2005	21,346,698	23,488,553	31,752,958	298,643	1.36x	8.0%	3.8%	4.2%
2005	Psilos Group Partners III, L.P.	10/24/2005	35,000,000	37,205,819	17,948,760	22,410,479	1.08x	1.4%	7.3%	(6.0%)
2005	USPF II Institutional Fund, L.P.	11/23/2005	65,000,000	85,734,194	82,299,936	28,270,575	1.29x	4.4%	7.7%	(3.3%)
2005	JP Morgan Fleming (Tranche A)	12/21/2005	43,000,000	42,480,963	39,191,747	17,013,869	1.32x	5.4%	10.8%	(5.4%)
2006	Aisling Capital II, LP	1/12/2006	6,880,102	7,853,301	6,821,024	1,101,437	1.01x	0.2%	8.1%	(8.0%)
2006	InterMedia Partners VII, L.P.	1/20/2006	25,000,000	29,198,197	29,591,747	1,706,479	1.07x	1.1%	9.9%	(8.8%)
2006	Terra Firma Capital Partners III, L.P.	3/8/2006	52,778,181	53,467,890	14,509,035	9,345,844	0.45x	(10.2%)	9.7%	(19.9%)
2006	BDCM Opportunity Fund II, L.P.	3/29/2006	25,000,000	37,160,726	58,739,441	27,961,501	2.33x	17.5%	11.4%	6.2%
2006	Blackstone Capital Partners V, L.P.	4/13/2006	121,624,827	129,317,991	200,388,311	11,981,674	1.64x	8.1%	8.4%	(0.3%)
2006	Avista Capital Partners, L.P.	4/27/2006	45,000,000	59,165,902	72,036,625	1,612,991	1.24x	4.6%	6.4%	(1.8%)
2006	GSC Recovery III, L.P.	5/4/2006	25,000,000	28,228,414	33,208,011	269,413	1.19x	4.3%	6.8%	(2.5%)
2006	Apollo Investment Fund VI, L.P.	5/10/2006	90,000,000	115,838,240	155,713,859	19,102,053	1.51x	8.8%	7.6%	1.1%
2006	Landmark Equity Partners XIII, L.P.	5/11/2006	50,000,000	47,997,218	49,687,368	12,245,399	1.29x	5.2%	6.5%	(1.3%)
2006	Ares Corporate Opportunities Fund II, L.P.	5/23/2006	50,000,000	54,760,870	88,767,769	3,556,905	1.68x	13.2%	3.9%	9.3%
2006	Fairview Ventures Fund III, L.P.	6/29/2006	25,000,000	26,284,335	29,578,013	22,178,989	1.97x	13.8%	12.6%	1.2%
2006	Ampersand 2006	8/14/2006	25,000,000	25,000,000	41,455,039	23,437,190	2.60x	16.1%	9.0%	7.1%
2006	CCMP Capital Investors II, L.P.	8/17/2006	30,000,000	32,911,805	56,364,117	302,604	1.72x	13.5%	10.5%	3.0%
2006	CLP 2014 (fka Perseus Partners VII)	8/31/2006	30,000,000	35,099,499	13,800,530	(35,007)	0.39x	(20.8%)	12.4%	(33.2%)
2006	Thomas, McNeerney & Partners II, L.P.	11/30/2006	25,000,000	25,349,167	49,944,019	4,730,775	2.16x	16.3%	11.5%	4.7%
2006	Catterton Partners VI, L.P.	12/14/2006	45,000,000	51,243,868	72,559,948	23,674,408	1.88x	12.1%	8.9%	3.1%
2006	First Reserve Fund XI, L.P.	12/14/2006	45,000,000	47,820,682	29,053,614	3,038,180	0.67x	(8.9%)	6.2%	(15.0%)
2006	Arsenal Capital Partners II, LP	12/19/2006	22,500,000	27,276,973	36,293,108	12,240,931	1.78x	11.2%	11.9%	(0.7%)
2006	RRE Ventures IV, L.P.	12/19/2006	35,000,000	44,063,397	24,528,820	47,176,684	1.51x	6.5%	11.1%	(4.7%)
2006	MidOcean Partners III, L.P.	12/21/2006	58,234,777	69,283,446	120,727,591	20,369,225	2.04x	13.0%	9.8%	3.2%
2006	GF Capital Private Equity Fund, L.P.	12/22/2006	20,000,000	20,716,299	26,087,171	12,167,184	1.85x	13.6%	12.6%	1.0%
2006	The Fourth Civen Fund	1/22/2007	69,252,088	72,910,838	105,001,759	319,527	1.44x	7.4%	7.5%	(0.2%)
2007	Pegasus Partners IV, L.P.	1/29/2007	30,000,000	36,210,832	23,854,519	11,202,470	0.97x	(0.6%)	11.2%	(11.9%)
2007	VF Ventures III, LP	3/1/2007	24,201,990	26,802,873	46,944,173	9,771,401	2.12x	15.9%	10.1%	5.8%
2007	Co-Investment Partners Europe, L.P.	3/19/2007	39,881,878	42,506,558	49,511,763	4,669,217	1.27x	4.8%	15.4%	(10.6%)
2007	Montreux Equity Partners IV, L.P.	3/27/2007	20,000,000	20,000,000	11,044,696	17,764,832	1.44x	6.0%	10.7%	(4.7%)
2007	Quaker BioVentures II, L.P.	3/30/2007	20,000,000	19,058,740	15,700,278	6,526,249	1.17x	3.7%	12.7%	(9.1%)
2007	SCP Vitalife Partners II Fund	4/13/2007	20,000,000	20,099,698	1,579	9,596,534	0.48x	(9.9%)	9.0%	(18.9%)
2007	Craton Equity Investors I, L.P.	4/30/2007	20,000,000	20,089,805	2,153,907	260,199	0.12x	(30.5%)	16.4%	(46.9%)
2007	Nautic Partners VI, L.P.	5/14/2007	30,000,000	33,794,398	70,848,915	8,924,951	2.36x	19.0%	12.1%	7.0%
2007	Constellation Venture Capital III, L.P.	5/22/2007	25,000,000	28,575,035	13,995,719	8,150,797	0.78x	(4.4%)	16.4%	(20.8%)
2007	United States Power Fund III, L.P.	6/28/2007	65,000,000	76,903,642	77,120,314	23,164,692	1.30x	4.9%	9.2%	(4.3%)
2007	Halyard Capital Fund II, L.P.	7/2/2007	25,000,000	21,505,407	26,003,376	4,871,304	1.44x	6.7%	9.9%	(3.2%)
2007	Carlyle Partners V, L.P.	7/6/2007	70,000,000	72,142,215	114,409,355	13,509,189	1.77x	13.8%	11.0%	2.9%
2007	PCG Clean Energy & Technology Fund (East), LLC	7/6/2007	90,000,000	81,429,594	14,013,084	26,120,696	0.49x	(10.4%)	13.3%	(23.6%)
2007	GSO Capital Opportunities Fund LP	7/16/2007	45,000,000	67,377,298	95,627,284	1,086,900	1.44x	17.5%	10.2%	7.2%
2007	StarVest Partners II, L.P.	8/1/2007	25,000,000	25,051,830	5,254,221	15,199,192	0.82x	(3.3%)	14.3%	(17.6%)
2007	New Mountain Partners III, L.P.	8/9/2007	100,000,000	101,697,235	130,503,404	64,969,283	1.92x	13.2%	12.8%	0.4%
2007	Vista Equity Partners Fund III, L.P.	10/3/2007	30,000,000	32,008,969	73,920,673	8,378,057	2.57x	27.5%	10.1%	17.3%
2007	Trilantic Capital Partners IV L.P.	10/22/2007	69,028,637	72,022,699	106,245,500	9,497,253	1.61x	14.1%	11.1%	3.0%
2007	RIJ Equity Partners Fund I, L.P.	11/30/2007	20,000,000	21,774,504	22,531,306	15,642,090	1.75x	12.6%	14.0%	(1.4%)
2007	Plu Brook Capital Partners, L.P.	1/11/2008	30,000,000	33,749,906	38,661,282	6,467,172	1.34x	7.9%	12.2%	(4.2%)
2008	Paladin III (NY City), L.P.	1/8/2008	30,000,000	39,598,771	28,239,981	28,353,522	1.43x	8.0%	12.3%	(4.3%)
2008	Relativity Fund, L.P.	1/17/2008	10,877,829	10,773,614	5,272,425	122,969	0.50x	(10.8%)	11.2%	(21.9%)
2008	Apollo Investment Fund VII, L.P.	1/28/2008	100,000,000	120,427,987	187,623,960	23,576,078	1.75x	23.4%	13.6%	9.8%
2008	NGN BioMed Opportunity II, L.P.	2/11/2008	20,000,000	19,151,821	7,946,209	12,433,104	1.06x	1.0%	15.1%	(14.1%)
2008	Carpenter Community BancFund-A, L.P.	2/12/2008	20,000,000	19,569,498	29,600,992	4,001,333	1.72x	8.5%	15.1%	(6.5%)
2008	Riverstone/Carlyle Global Energy & Power Fund IV, L.P.	3/3/2008	45,000,000	50,751,701	40,550,843	21,453,998	1.22x	5.4%	14.0%	(8.6%)
2008	Yucaipa American Alliance Fund II, LP	3/28/2008	120,000,000	163,744,290	97,293,704	157,842,032	1.56x	9.1%	12.6%	(3.5%)
2008	Levina Leitchman Capital Partners IV, L.P.	4/8/2008	35,000,000	37,384,126	52,817,272	13,561,263	1.78x	19.7%	14.4%	5.3%
2008	Lee Equity Partners Fund, L.P.	4/23/2008	36,779,895	50,519,026	61,415,282	211,294	1.22x	6.3%	13.4%	(7.0%)
2008	New York/Fairview Emerging Managers Fund, L.P.-Tranche 2	5/28/2008	45,000,000	44,397,265	36,288,530	41,891,218	1.76x	14.4%	13.5%	0.9%
2008	Yucaipa Corporate Initiatives Fund II, LP	6/23/2008	42,092,788	41,094,236	12,669,673	25,958,434	0.94x	(1.0%)	11.4%	(12.4%)
2008	Leeds Equity Partners V, L.P.	7/28/2008	60,000,000	57,812,601	58,038,076	56,810,327	1.99x	17.5%	13.9%	3.6%
2008	GI Partners Fund III L.P.	7/29/2008	45,000,000	48,592,079	70,014,239	6,504,638	1.57x	13.2%	15.4%	(2.3%)
2008	Ares Corporate Opportunities Fund III, L.P.	7/30/2008	75,000,000	90,326,274	126,701,097	71,876,177	2.20x	22.0%	12.5%	9.5%
2008	GCM Grosvenor NYCERS Emerging Manager Fund, L.P.	8/22/2008	116,737,374	137,734,099	114,107,303	78,636,866	1.40x	10.6%	13.8%	(3.2%)
2008	First Reserve Fund XII, L.P.	8/25/2008	45,000,000	49,204,883	24,517,527	8,596,413	0.67x	(9.4%)	16.6%	(26.0%)
2008	Landmark Equity Partners XIV, L.P.	9/19/2008	109,120,000	105,682,830	110,407,371	27,503				



New York City Employees' Retirement System  
Private Equity Portfolio  
As of June 30, 2018 (in USD)

Vintage Year	Investment	First Drawdown	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Multiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME Spread <sup>3</sup>
2011	BDCM Opportunity Fund III, L.P.	4/8/2011	45,000,000	60,142,246	20,728,277	59,337,536	1.33x	8.8%	13.1%	(4.3%)
2011	AXA Secondary Fund V B L.P.	6/16/2011	120,000,000	98,289,407	135,473,060	25,339,809	1.64x	16.6%	14.9%	1.7%
2011	Wellspring Capital Partners V, L.P.	7/1/2011	40,000,000	40,305,719	43,967,635	17,676,628	1.53x	16.0%	12.6%	3.4%
2011	EQT VI, L.P.	8/1/2011	106,153,491	109,735,801	96,805,710	90,659,142	1.71x	15.4%	12.7%	2.7%
2011	Pegasus Partners V, L.P.	8/16/2011	20,789,916	23,877,216	15,051,753	25,548,000	1.70x	15.1%	15.0%	0.2%
2011	BC European Capital IX	9/19/2011	131,448,163	140,711,317	88,086,537	112,213,560	1.42x	11.7%	14.0%	(2.3%)
2011	American Securities Partners VI, L.P.	11/18/2011	80,000,000	85,737,419	122,590,988	39,534,162	1.89x	22.3%	13.5%	8.8%
2011	Vista Equity Partners Fund IV, L.P.	11/30/2011	100,000,000	103,049,618	117,335,988	81,749,988	1.93x	19.0%	13.8%	5.1%
2012	Warburg Pincus Private Equity XI, L.P.	5/24/2012	110,000,000	117,033,488	71,662,752	108,028,485	1.54x	14.9%	13.0%	1.9%
2012	Trilantic Capital Partners V L.P.	9/20/2012	70,000,000	72,068,087	54,816,759	51,557,739	1.48x	19.4%	12.9%	6.5%
2012	Palladium Equity Partners IV, L.P.	10/10/2012	55,000,000	44,306,372	24,355,205	40,940,801	1.47x	15.1%	14.0%	1.2%
2012	Ares Corporate Opportunities Fund IV, L.P.	11/5/2012	125,000,000	126,511,836	66,557,047	112,180,419	1.41x	13.4%	11.6%	1.8%
2012	Green Equity Investors VI, L.P.	11/30/2012	120,000,000	128,300,416	74,496,178	125,730,779	1.56x	16.6%	12.8%	3.8%
2012	Platinum Equity Capital Partners III, L.P.	1/14/2013	100,000,000	82,294,117	85,689,852	73,298,070	1.93x	41.3%	13.9%	27.5%
2012	NYCERS - 2012 Emerging Manager Program <sup>4</sup>	6/21/2013	139,600,000	125,825,713	37,275,473	137,365,819	1.39x	14.9%	12.1%	2.8%
2013	Carlyle Partners VI, L.P.	7/3/2013	75,000,000	77,492,043	27,110,150	72,356,225	1.28x	13.3%	12.1%	1.3%
2013	Carlyle Partners VI, L.P. (Side Car)	9/23/2013	8,250,000	5,875,005	315,288	6,048,901	1.08x	3.3%	12.0%	(8.7%)
2013	Landmark Equity Partners XV, L.P.	10/30/2013	75,000,000	50,370,249	28,176,676	35,793,917	1.27x	14.8%	12.1%	2.7%
2013	Apollo Investment Fund VIII, L.P.	12/11/2013	140,000,000	119,721,058	32,090,796	125,802,900	1.32x	15.4%	13.0%	2.4%
2013	Landmark - NYC Fund I, L.P.	12/24/2013	25,000,000	20,043,953	9,606,569	18,719,312	1.41x	18.6%	10.6%	8.0%
2013	CVC Capital Partners VI, L.P.	2/18/2014	123,890,161	107,617,231	17,844,854	115,451,021	1.24x	13.0%	12.9%	0.1%
2013	Crestview Partners III, L.P.	3/3/2015	66,000,000	28,449,427	5,101,711	29,970,315	1.23x	10.9%	12.6%	(1.7%)
2013	Crestview Partners III (Co-Investment B), L.P.	12/17/2015	22,000,000	16,704,736	1,083,292	18,448,169	1.17x	9.6%	15.4%	(5.8%)
2014	Olympus Growth Fund VI, L.P.	1/21/2014	75,000,000	53,009,662	17,430,727	56,075,830	1.39x	19.0%	14.5%	4.5%
2014	ASF VI B L.P.	5/9/2014	83,000,000	53,666,607	22,175,553	53,496,120	1.41x	14.4%	12.1%	2.3%
2014	ASF VI B NYC Co-Invest L.P.	5/9/2014	27,000,000	19,969,085	13,149,532	14,844,274	1.40x	14.4%	9.4%	5.0%
2014	Vista Equity Partners Fund V, L.P.	9/8/2014	125,000,000	126,855,788	28,038,003	188,586,595	1.71x	22.6%	12.4%	10.2%
2014	Lexington Capital Partners VIII, L.P.	1/8/2015	110,000,000	63,400,114	25,512,794	63,761,681	1.41x	28.8%	13.8%	15.0%
2015	Siris Partners III, L.P.	5/4/2015	31,000,000	21,644,122	1,343,052	26,911,503	1.31x	18.2%	14.1%	4.1%
2015	Centerbridge Capital Partners III, L.P.	5/21/2015	23,700,000	12,906,821	2,595,810	13,331,697	1.23x	13.3%	12.9%	0.4%
2015	Welsh, Carson, Anderson & Stowe XII, L.P.	8/26/2015	78,500,000	47,594,193	9,275,331	54,263,585	1.34x	21.0%	15.0%	6.0%
2015	Warburg Pincus Private Equity XII, L.P.	12/21/2015	205,500,000	108,897,547	3,020,850	122,606,085	1.15x	12.4%	14.9%	(2.5%)
2015	ASF VII B L.P.	12/29/2015	94,500,000	27,305,007	462,593	34,340,367	1.27x	23.9%	14.0%	9.8%
2015	ASF VII B NYC Co-Invest L.P.	12/29/2015	46,000,000	22,308,913	-	33,858,534	1.52x	94.2%	9.6%	84.6%
2015	EQT VII, L.P.	1/8/2016	163,375,272	106,205,368	8,077,726	124,876,710	1.25x	17.6%	15.6%	2.0%
2015	American Securities Partners VII, L.P.	1/19/2016	80,000,000	45,093,757	1,133,185	48,216,981	1.09x	8.2%	15.4%	(7.2%)
2015	Bridgepoint Europe V L.P.	2/8/2016	62,139,653	43,521,348	5,959,601	49,270,043	1.27x	21.0%	16.8%	4.2%
2015	Bridgepoint Europe V Co-Invest	8/16/2016	18,368,732	14,453,317	-	20,038,842	1.39x	NM	NM	N/A
2015	NYCERS - 2015 Emerging Manager Program <sup>5</sup>	2/22/2016	190,400,000	29,907,289	1,860,624	34,228,276	1.21x	26.6%	14.2%	12.4%
2016	Vista Equity Partners Fund VI, L.P.	6/28/2016	158,000,000	115,494,294	378,662	128,576,321	1.12x	8.6%	16.0%	(7.4%)
2016	Platinum Equity Capital Partners IV, L.P.	3/21/2017	111,000,000	58,495,566	5,745,609	64,868,112	1.21x	NM	NM	N/A
2018	Platinum Equity Capital Partners IV Co-Investment, L.P.	9/7/2018	16,000,000	-	-	-	-	N/A	N/A	N/A
2016	Apax IX USD, L.P.	5/12/2017	127,000,000	56,233,233	1,204,490	61,067,944	1.11x	NM	NM	N/A
2017	Green Equity Investors VII, L.P.	5/12/2017	95,000,000	35,315,703	376,189	35,466,878	1.01x	NM	NM	N/A
2017	Ares Corporate Opportunities Fund V, L.P.	6/22/2017	95,000,000	32,129,288	1,290,266	30,747,458	1.00x	NM	NM	N/A
2017	KKR Americas Fund XII, L.P.	10/31/2017	158,000,000	22,387,376	-	22,376,764	1.00x	NM	NM	N/A
2017	BC European Capital X	12/14/2017	91,238,982	22,141,443	-	20,430,537	0.92x	NM	NM	N/A
2017	BCEC X Co-Investment	3/24/2017	36,369,414	10,715,583	-	10,317,525	0.96x	NM	NM	N/A
2017	Warburg Pincus Financial Sector, L.P.	1/5/2018	104,000,000	16,479,156	5,304,000	10,004,647	0.93x	NM	NM	N/A
2018	Platinum Equity Small Cap Fund, L.P.	6/27/2018	41,000,000	1,771,200	-	1,525,104	0.86x	NM	NM	N/A
2018	EQT VIII, L.P.	N/A	113,756,175	-	-	-	-	N/A	N/A	N/A
2018	EQT VIII Co-Investment	N/A	41,365,882	-	-	-	-	N/A	N/A	N/A
2018	Apollo Investment Fund IX, L.P.	N/A	256,000,000	-	-	(841,887)	-	NM	NM	N/A
2018	Bridgepoint Europe VI	N/A	124,256,745	-	-	-	-	N/A	N/A	N/A
2018	Bridgepoint Europe VI Co-Invest	N/A	31,064,186	-	-	-	-	N/A	N/A	N/A
2018	Crestview Partners IV, L.P.	N/A	71,000,000	-	-	-	-	N/A	N/A	N/A
2018	Crestview Partners IV (Co-Investment), L.P.	N/A	23,666,667	-	-	-	-	N/A	N/A	N/A
2018	CVC Capital Partners VII, L.P.	N/A	159,842,010	-	-	1,333,901	-	NM	NM	N/A
2018	Siris Partners IV, L.P.	N/A	89,000,000	-	-	-	-	N/A	N/A	N/A
<b>Total Portfolio<sup>6</sup></b>			<b>\$ 10,433,763,619</b>	<b>\$ 8,718,684,470</b>	<b>\$ 7,914,301,769</b>	<b>\$ 4,664,847,099</b>	<b>1.44x</b>	<b>9.9%</b>	<b>10.4%</b>	<b>(0.5%)</b>

Vintage Year	Investment	First Drawdown	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Multiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME Spread <sup>3</sup>
<b>Commitments Closed Subsequent to as of Date</b>										
2018	Raine Partners III, LP	N/A	\$ 26,000,000	\$ -	\$ -	\$ -	N/A	N/A	N/A	N/A
2018	Welsh, Carson, Anderson & Stowe XIII, L.P.	N/A	\$ 89,000,000	\$ -	\$ -	\$ -	N/A	N/A	N/A	N/A
2018	Vista Equity Partners Fund VII, L.P.	N/A	\$ 177,500,000	\$ -	\$ -	\$ -	N/A	N/A	N/A	N/A
2018	KKR European Fund V (USD) SCSP	N/A	\$ 83,250,000	\$ -	\$ -	\$ -	N/A	N/A	N/A	N/A
<b>Total Commitments Closed Subsequent to as of Date</b>			<b>\$ 375,750,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup> Performance for funds with less than eight (8) quarters of activity is not meaningful.

<sup>2</sup> Russell 3000 PME+ or Long-Nickels PME for investments with no distributed capital as of quarter-end.

<sup>3</sup> PME Spread is calculated as IRR minus PME Benchmark.

<sup>4</sup> NYCERS - 2012 Emerging Manager Program total commitment amount of \$139.6 million has been fully committed as of June 30, 2015.

<sup>5</sup> NYCERS - 2015 Emerging Manager Program total commitment amount includes the full amount allocated to the Program, of which \$158.8 million has been committed as of November 21, 2018.

<sup>6</sup> Total Portfolio includes liquidated investments.

Note: IRRs presented are interim estimates and may not be indicative of the ultimate performance of fund investments due to a number of factors, such as the lack of industry valuation standards and the differences in the investment pace and strategy of various funds. Until a fund is liquidated, typically over 10 to 12 years, the IRR is not an interim estimated return. The IRR calculated in early years of a fund is not meaningful given the J-curve effect. The actual IRR performance of any fund is not known until all capital contributed and earnings have been distributed to the investor. The IRRs contained in this report are calculated by StepStone Group LP ("StepStone"), a consultant to the New York City Employees' Retirement System, based on information provided by the general partners (e.g. cash flows and valuations). The IRR calculations and other information contained in this report have not been reviewed or confirmed by the general partners. The result of the IRR calculation may differ from that generated by the general partner or other limited partners. Differences in IRR calculations can be affected by cash-flow timing, the accounting treatment of carried interest, fund management fees, advisory fees, organizational fees, other fund expenses, sale of distributed stock, and valuations.

**Real Estate Quarterly Report (Public):**

# NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM

## REAL ESTATE PORTFOLIO

### MONITORING REPORT

Second Quarter 2018



**COURTLAND**  
*a StepStone company*

**TABLE OF CONTENTS**

I. Significant Valuation Changes.....	1
II. Top 10 Portfolio Holdings.....	3
III. Performance by Strategy.....	4
IV. Performance by Vintage Year.....	5
V. Investments by Vintage Year.....	6

## I. Significant Valuation Changes

During the second quarter of 2018, net of cash flow activity, 44 investments appreciated and 20 declined in value from the prior quarter. Below are the top 15 valuation changes (in terms of the absolute value of impact) that occurred in the portfolio during the quarter. These valuation changes account for 63.8% of the valuation change during the quarter.

USD in millions

Investments	Valuation Change USD	Valuation Change %	Comments
NYCRS Artemis Co-Investment	\$16.5	80.0%	The increase in valuation was a result of four capital calls made throughout the quarter. The capital calls were related to various investments including the Portfolio's Boro investment, the Ashford Hospitality Portfolio, the Ashford Hospitality Select Service Mezzanine Portfolio, and the Palmetto Logistics investment.
NYCRS-KKR CMBS Retention Partners	\$12.6	23.2%	The Fund, now a year old, continued its trend of calling capital to fund portfolio investments. The increase in valuation due to the call was partially offset by a distribution of income. The call resulted in the Fund being 55% funded.
Blackstone Real Estate Partners Europe IV (USD Vehicle)	-\$11.6	-10.2%	The net decrease in the Fund's value was driven by distributions related to sale and refinancing proceeds, as well as cash flow from ongoing operations. Sales proceeds included the sale of the 20 Old Bailey asset.
KKR Real Estate Partners Americas II	\$9.2	385.3%	The Fund, in its second quarter, increased its activity by calling capital relating to funding investments. The resulting increase in valuation was augmented by the appreciation of previously acquired assets.
USAA Eagle Real Estate Fund	\$7.6	12.3%	The increase in the Fund's value was a result of two capital calls made during the quarter. These calls resulted in the Fund increasing its ownership percentage of The Alchemy and funding pre-development activities of a newly closed joint-venture in the Martin Expo Town Center asset.
NYC Asset Investor #2 LLC (Related)	-\$7.0	-7.0%	The net decrease in valuation was driven by distributions related to sales proceeds and operating income. Partially offsetting this decrease was the unrealized appreciation in fair value of nine of the ten assets in the Fund.
Lone Star Real Estate Fund III	-\$6.4	-17.8%	The decrease in the Fund's value was directly related to five separate distributions throughout the quarter from eight underlying investments. An additional contributor to the valuation decrease was the unrealized depreciation in its European portfolio, specifically the Lusort asset.
Blackstone Real Estate Partners VIII	\$5.3	6.2%	The Fund made several capital calls throughout the quarter, helping to drive the increase in valuation. The capital calls were related to several assets including the Copenhagen multifamily investment, OfficeFirst, the All-Star Office Portfolio, and quarterly management fees. Partially offsetting the increase was a distribution related to sales proceeds, refinancing proceeds, and cash flow from ongoing operations.
Carlyle Realty Partners VII	-\$5.3	-8.5%	The decrease in valuation was driven by a distribution comprised of the return of capital, realized gain, and income of various assets. Offsetting this decrease was the income and unrealized appreciation of underlying assets.

## New York City Employees' Retirement System

Second Quarter 2018

USD in millions

Investments	Valuation Change USD	Valuation Change %	Comments
UBS Trumbull Property Fund	\$5.3	1.8%	The main driver in the increase in Fund valuation was an increase in both income and appreciation during the quarter. These increases were lead by Fund's Industrial portfolio, followed by the Hotel and Office assets.
JP Morgan Strategic Property Fund	\$5.1	1.8%	The net increase in the Fund's valuation was a result of positive developments in income and unrealized appreciation. Quarterly evaluation of investments and net realized dispositions resulted in appreciation driven by the office and industrial sectors. The Fund also saw appreciation of assets in the residential sector while retail experienced depreciation.
NYC Asset Investor #1 LLC (Vanbarton)	-\$5.1	-8.3%	The decrease in valuation was driven by a distribution related to the Riverdale and Studio Square assets. A decrease in unrealized appreciation further contributed to the decline in value.
Heitman HART	\$4.7	2.0%	The increase in the Fund's valuation was driven by positive income generation during the quarter as well as appreciation in various underlying asset sectors. Further contributing to the increase in valuation was a reinvestment of a distribution.
Blackstone Real Estate Partners Europe III (USD Vehicle)	-\$4.5	-22.8%	The significant drivers of the decrease in valuations include a distribution and unrealized depreciation. The distribution came as a result of the sale of Deveonshire Square. The unrealized depreciation reflects revised leasing forecasts in the Fund's Turkey Retail asset. Partially offsetting the unrealized depreciation was the acquisition of debt secured by the Italian Mixed-Use Portfolio.
European Property Investors Special Opportunities IV (EPISO IV)	\$4.2	18.5%	The main driver of the increase in the Fund's valuation was a capital call made related to various underlying assets. This call was partially offset by a return of capital from Projects Leo and Edman. The valuation increase was aided by positive income and currency appreciation.

## II. Top 10 Portfolio Holdings

The following table shows the top 10 holdings in the portfolio in terms of the current exposed market value. These investments comprised approximately 52.9% of the portfolio's exposed market value as of quarter end.

*USD in millions*

Investments	Contributions	Total Distributions	Exposed Current Market Value
UBS Trumbull Property Fund	\$3.1	-\$3.1	\$303.3
JP Morgan Strategic Property Fund	\$3.4	-\$3.4	\$295.9
Heitman HART	\$1.9	-\$1.9	\$246.6
PRISA II	\$0.0	-\$1.8	\$209.0
PRISA III	\$0.9	-\$0.9	\$152.0
Blackstone Real Estate Partners VII	\$0.3	-\$5.6	\$137.5
JP Morgan Special Situation Property Fund	\$1.0	-\$1.8	\$126.1
RREEF America REIT II	\$0.0	-\$1.0	\$121.0
PRISA SA	\$0.0	-\$1.1	\$118.9
Brookfield Strategic Real Estate Partners	\$0.0	-\$4.0	\$109.7
<b>Total</b>	<b>\$10.6</b>	<b>-\$24.4</b>	<b>\$1,820.2</b>

### III. Performance by Strategy

The following table shows the portfolio's since inception performance by strategy as of the end of June 30, 2018.

USD in millions

Investments by Strategy	Number of Investments	Committed Capital	Contributions	Distributions	Market Value	Unfunded Commitment	Total Exposure	TVM	IRR	NYCRS Benchmark <sup>2</sup>	Benchmark Spread <sup>3</sup>
Core <sup>1</sup>	23	\$1,682.2	\$1,950.1	\$600.6	\$2,179.1	\$129.9	\$2,309.0	1.50x	5.9%	6.4%	-0.5%
Non-Core <sup>1</sup>	52	\$3,246.6	\$2,535.5	\$2,345.4	\$1,263.1	\$1,053.2	\$2,316.3	1.44x	11.5%	8.2%	3.4%
<b>Total<sup>1</sup></b>	<b>75</b>	<b>\$4,928.9</b>	<b>\$4,485.6</b>	<b>\$2,946.0</b>	<b>\$3,442.1</b>	<b>\$1,183.1</b>	<b>\$4,625.3</b>	<b>1.46x</b>	<b>8.1%</b>	<b>7.5%</b>	<b>0.6%</b>
Emerging Managers <sup>1</sup>	6	\$172.0	\$132.2	\$76.9	\$57.6	\$47.9	\$105.6	1.02x	0.4%	6.5%	-6.0%
Debt	9	\$660.3	\$315.6	\$181.0	\$215.1	\$345.9	\$561.0	1.25x	14.5%	8.0%	6.5%

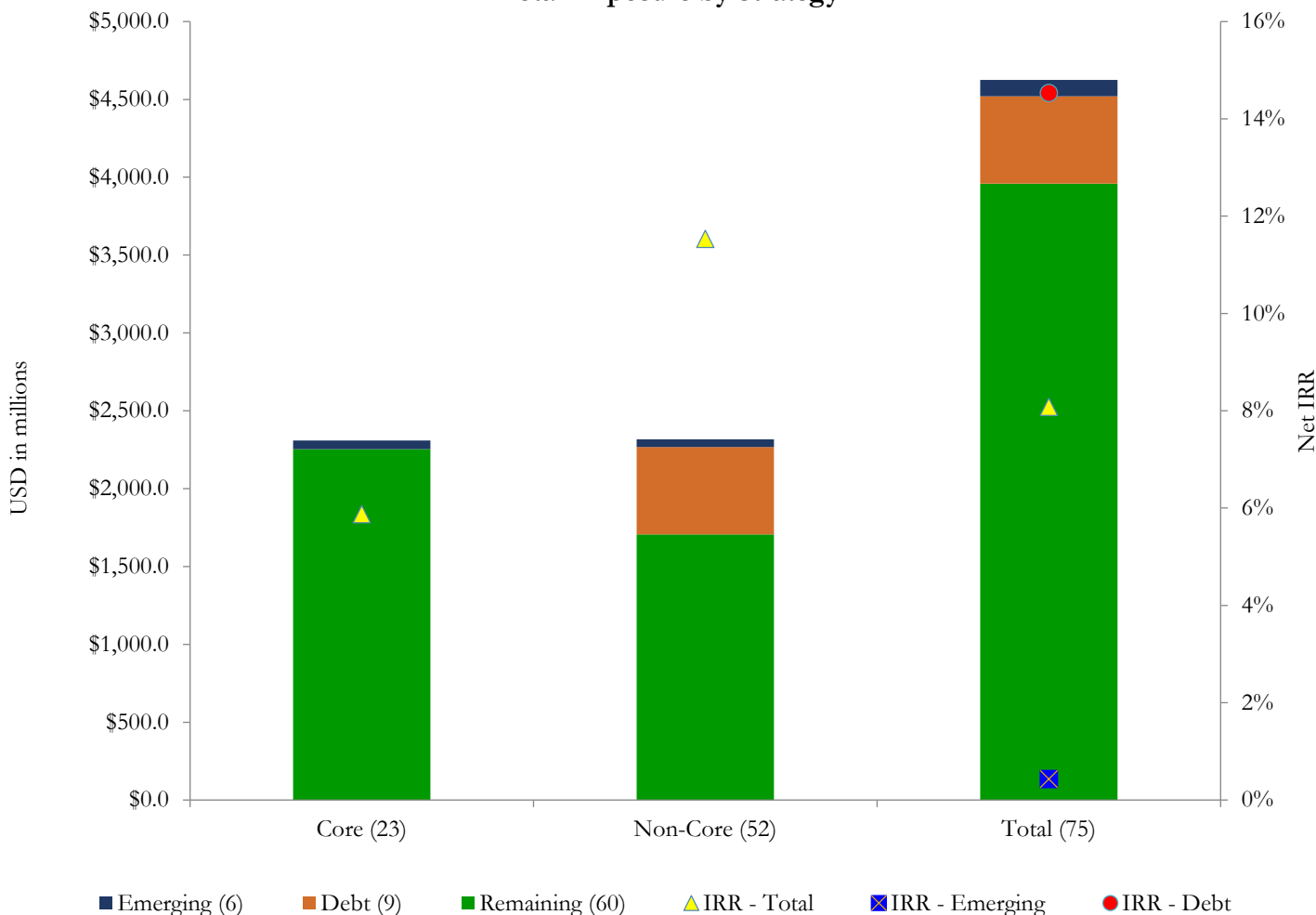
<sup>1</sup> Total includes liquidated investments, except for commitments and total exposure.

<sup>2</sup> The blended benchmark is comprised of Russell 3000 and Barclays Capital Aggregate Bond Index at the ratios of 40/60, 60/40 and 50/50 for Core, Non-Core and Total Portfolio, respectively, except that BofA Merrill Lynch US High Yield Index is the benchmark for NYCRS-KKR CMBS Retention Partners, a non-core investment.

<sup>3</sup> Spread is calculated as IRR minus the Blended Benchmark for NYCRS.

The following chart illustrates the portfolio's diversification first by risk (core vs non-core) and then by underlying strategy within each category.

Total Exposure by Strategy



Number of funds represents the total number of investments for each strategy.



#### IV. Performance by Vintage Year

The following table and graph illustrates the Portfolio's since inception investment performance and exposure vintage year as of the end of June 30, 2018.

USD in millions

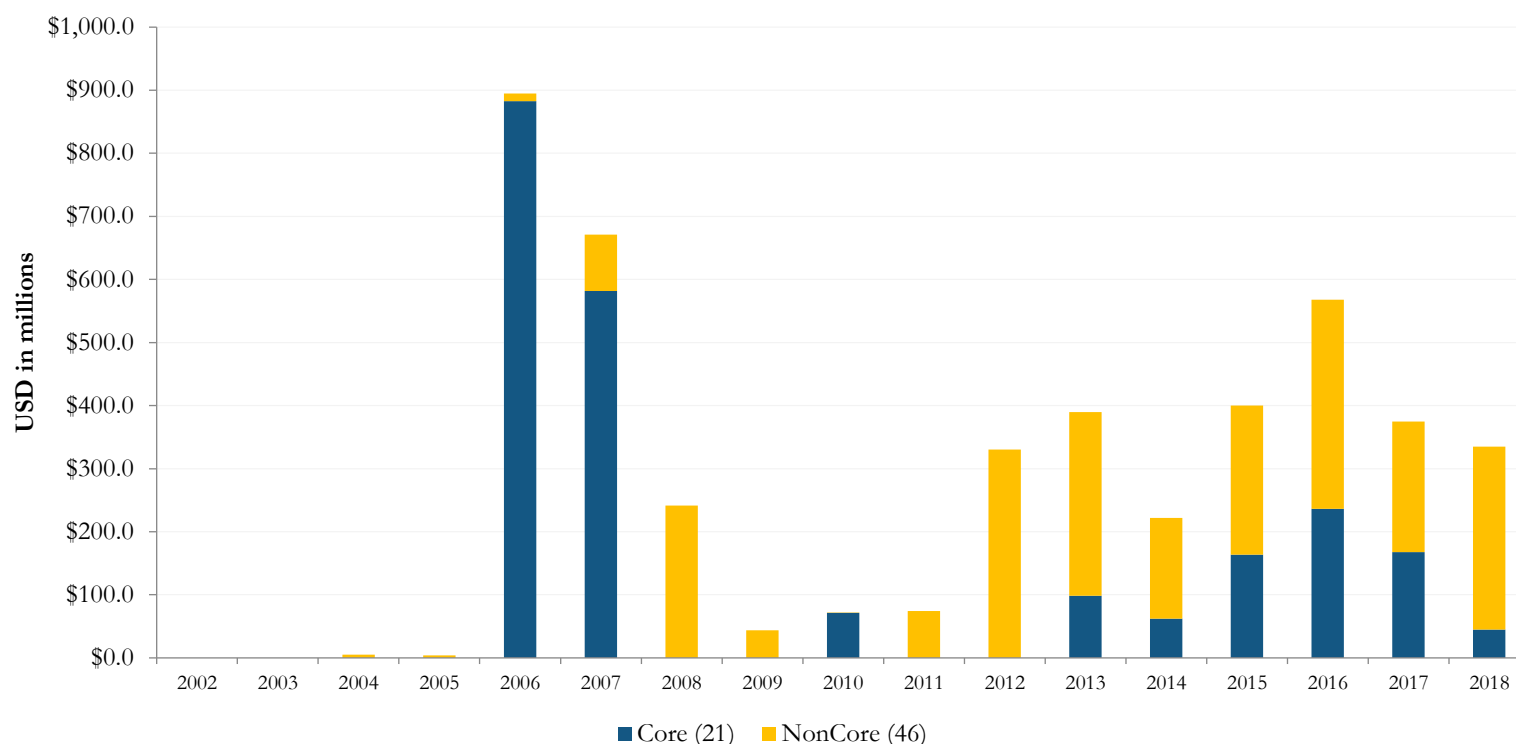
Vintage Year	Core				Non-Core				Total			
	Total Exposure	TVM <sup>1</sup>	IRR <sup>1</sup>	Quartile	Total Exposure	TVM <sup>1</sup>	IRR <sup>1</sup>	IRR Quartile-Private iQ <sup>3</sup>	Total Exposure	TVM <sup>1</sup>	IRR <sup>1</sup>	IRR Quartile-Private iQ <sup>3</sup>
2002	\$0.0	N/M	N/M	N/A	\$0.0	1.20x	11.1%	Third	\$0.0	1.20x	11.1%	Third
2003	\$0.0	N/M	N/M	N/A	\$0.0	N/M	N/M	N/A	\$0.0	N/M	N/M	N/A
2004	\$0.0	N/M	N/M	N/A	\$5.1	1.64x	20.5%	First	\$5.1	1.64x	20.5%	First
2005	\$0.0	N/M	N/M	N/A	\$4.2	0.45x	-10.5%	Fourth	\$4.2	0.45x	-10.5%	Fourth
2006	\$882.7	1.69x	5.7%	N/A	\$11.9	1.02x	0.3%	Second	\$894.6	1.67x	5.5%	First
2007	\$581.8	1.55x	4.7%	N/A	\$89.1	1.47x	7.6%	First	\$670.9	1.51x	5.5%	Second
2008	\$0.0	N/M	N/M	N/A	\$241.3	1.38x	5.2%	Third	\$241.3	1.38x	5.2%	Third
2009	\$0.0	N/M	N/M	N/A	\$43.5	1.37x	9.9%	Third	\$43.5	1.37x	9.9%	Third
2010	\$71.2	1.76x	11.2%	N/A	\$0.4	1.34x	11.9%	Second	\$71.6	1.60x	11.4%	Second
2011	\$0.0	N/M	N/M	N/A	\$74.1	1.53x	18.7%	Second	\$74.1	1.53x	18.7%	Second
2012	\$0.0	N/M	N/M	N/A	\$330.1	1.77x	19.2%	First	\$330.1	1.77x	19.2%	First
2013	\$98.6	1.57x	15.7%	N/A	\$291.3	1.40x	15.1%	Second	\$389.9	1.43x	15.3%	Second
2014	\$61.9	1.39x	10.4%	N/A	\$160.0	1.35x	16.7%	First	\$221.9	1.36x	14.3%	Second
2015	\$163.5	1.21x	11.8%	N/A	\$236.8	1.25x	15.7%	First	\$400.3	1.23x	13.8%	Second
2016	\$236.3	1.19x	14.1%	N/A	\$331.6	1.16x	16.3%	First	\$567.9	1.18x	14.6%	Second
2017	\$167.9	1.11x	11.1%	N/A	\$207.0	1.08x	13.3%	N/M	\$374.9	1.10x	11.6%	N/M
2018	\$2,309.0	1.50x	5.9%	N/A	\$289.8	N/M	N/M	N/A	\$334.8	N/M	N/M	N/A
<b>Total<sup>2</sup></b>	<b>\$2,309.0</b>	<b>1.50x</b>	<b>5.9%</b>		<b>\$2,316.3</b>	<b>1.44x</b>	<b>11.5%</b>		<b>\$4,625.3</b>	<b>1.46x</b>	<b>8.1%</b>	

<sup>1</sup>IRRs and TVMs for investments are not considered meaningful until they have been held for two full years.

<sup>2</sup>Relationship totals include liquidated investments.

<sup>3</sup>Quartiles based on Private iQ Real Estate Benchmarks - Global All Real Estate.

#### Total Exposure by Vintage Year



Number of funds represents the total number of investments for each vintage year.

## V. Investments by Vintage Year

Investment	Vintage Year	First Draw-down	Committed Capital	Contributions	Distributions	Market Value	Multiple	IRR <sup>1</sup>	PME <sup>2</sup>	PME Spread <sup>3</sup>
<b>Active Investments:</b>										
Blackstone Fund IV	2004	5/2004	\$30,000,000	\$38,393,533	(\$49,560,712)	\$4,600,935	1.42x	10.3%	7.1%	3.2%
The City Investment Fund I	2004	3/2004	\$225,000,000	\$221,883,300	(\$224,384,800)	\$482,896	1.01x	0.3%	7.1%	-6.8%
Canyon Johnson Urban Fund II	2005	5/2005	\$40,000,000	\$35,954,815	(\$15,898,610)	\$137,816	0.45x	-10.5%	7.3%	-17.7%
AREA Real Estate Investment Fund V, LP	2006	6/2006	\$25,000,000	\$25,000,000	(\$16,095,820)	\$9,399,288	1.02x	0.3%	7.1%	-6.8%
Colony Realty Partners II	2006	12/2006	\$20,000,000	\$24,666,122	(\$8,957,737)	\$0	0.26x	-13.3%	6.0%	-19.3%
JP Morgan Strategic Property Fund	2006	12/2006	\$136,000,000	\$243,678,112	(\$92,923,465)	\$295,937,614	1.96x	7.2%	6.2%	1.0%
PRISA SA	2006	9/2006	\$86,000,000	\$92,673,389	(\$31,966,789)	\$118,929,036	1.63x	4.7%	6.4%	-1.7%
Prologis Targeted U.S. Logistics Fund	2006	10/2006	\$25,000,000	\$34,039,524	(\$9,942,350)	\$43,530,166	1.57x	5.1%	6.2%	-1.1%
RREEF America REIT II	2006	10/2006	\$86,000,000	\$113,537,802	(\$55,692,932)	\$120,998,851	1.56x	5.1%	6.2%	-1.1%
UBS Trumbull Property Fund	2006	9/2006	\$156,000,000	\$243,390,768	(\$73,298,882)	\$303,314,184	1.78x	6.4%	6.4%	0.0%
American Value Partners Fund I	2007	10/2007	\$55,000,000	\$39,320,163	(\$40,907,897)	\$5,499,971	1.18x	3.5%	6.7%	-3.2%
Blackstone Real Estate Partners VI	2007	7/2007	\$110,000,000	\$123,415,082	(\$230,988,368)	\$13,971,748	1.99x	13.3%	6.7%	6.6%
Carlyle Realty Partners V	2007	8/2007	\$20,000,000	\$25,710,785	(\$29,522,662)	\$6,564,482	1.59x	8.4%	6.7%	1.7%
Heitman HART	2007	3/2007	\$115,000,000	\$176,466,897	(\$61,466,897)	\$246,644,755	2.14x	8.1%	6.0%	2.1%
JP Morgan Special Situation Property Fund	2007	1/2007	\$90,000,000	\$140,160,409	(\$70,647,911)	\$126,148,724	1.55x	4.7%	6.0%	-1.3%
Metropolitan Workforce Housing Fund	2007	7/2007	\$14,000,000	\$14,013,027	(\$16,469,642)	\$495,286	1.20x	3.8%	6.7%	-2.9%
PRISA II	2007	6/2007	\$141,518,761	\$150,922,667	(\$42,529,640)	\$209,009,596	1.67x	5.8%	6.0%	-0.2%
Thor Urban Property Fund II	2007	10/2008	\$40,000,000	\$54,796,108	(\$54,781,253)	\$17,731,822	1.32x	8.3%	8.8%	-0.6%
Westbrook Real Estate Fund VII	2007	12/2007	\$40,000,000	\$43,752,774	(\$40,290,913)	\$12,432,023	1.21x	3.3%	6.7%	-3.4%
AREA European Real Estate Fund III, LP	2008	5/2008	\$30,000,000	\$30,487,500	(\$32,677,500)	\$1,949,833	1.14x	3.2%	7.6%	-4.4%
Blackstone Real Estate Partners Europe III	2008	10/2008	\$50,000,000	\$51,860,239	(\$64,603,383)	\$15,344,936	1.54x	12.2%	8.8%	3.3%
Capri Urban Investors	2008	6/2008	\$60,000,000	\$60,000,000	(\$27,538,270)	\$17,040,141	0.74x	-4.3%	7.6%	-12.0%
PRISA III	2008	9/2008	\$50,000,000	\$109,833,194	(\$49,434,695)	\$151,950,724	2.52x	12.3%	8.0%	4.3%
Silverpeak Legacy Partners III	2008	6/2008	\$50,000,000	\$23,463,317	(\$3,242,529)	\$5,256,765	0.32x	-11.9%	7.6%	-19.5%
Stockbridge Real Estate Fund III	2008	9/2008	\$27,000,000	\$26,998,145	(\$16,829,753)	\$14,595,552	1.16x	2.4%	8.0%	-5.6%
Walton Street Real Estate Fund VI	2009	4/2009	\$50,000,000	\$44,323,933	(\$47,860,267)	\$20,538,519	1.54x	9.2%	11.6%	-2.5%
Westbrook Real Estate Fund VIII	2009	6/2010	\$50,000,000	\$59,523,042	(\$67,851,469)	\$10,894,859	1.32x	11.8%	9.3%	2.5%
Canyon Johnson Urban Fund III	2010	3/2010	\$30,000,000	\$29,971,216	(\$40,371,580)	\$36,401	1.34x	11.9%	9.5%	2.4%
LaSalle Property Fund	2010	7/2010	\$50,000,000	\$50,000,000	(\$16,638,183)	\$71,174,143	1.76x	11.2%	7.8%	3.4%
Carlyle Realty Partners VI	2011	9/2011	\$70,000,000	\$75,754,634	(\$103,231,881)	\$12,957,510	1.54x	21.7%	9.0%	12.8%
H/2 Special Opportunities Fund II	2011	2/2011	\$40,000,000	\$39,999,999	(\$46,343,790)	\$15,135,843	1.51x	14.8%	9.0%	5.8%
Blackstone Real Estate Partners VII	2012	4/2012	\$170,000,000	\$208,137,392	(\$202,783,860)	\$137,544,429	1.68x	18.3%	8.8%	9.5%
Brookfield Strategic Real Estate Partners	2012	9/2012	\$100,000,000	\$118,076,518	(\$110,279,627)	\$109,738,282	1.95x	22.0%	9.4%	12.6%
Taconic New York City Investment Fund LP	2012	7/2012	\$70,000,000	\$28,954,546	(\$46,945,824)	\$3,259,892	1.73x	15.6%	9.4%	6.2%
Blackstone Real Estate Partners Europe IV	2013	12/2013	\$169,000,000	\$162,889,552	(\$139,019,197)	\$102,470,750	1.49x	16.5%	8.4%	8.0%
Lone Star Real Estate Fund III	2013	5/2014	\$100,000,000	\$93,741,548	(\$98,332,596)	\$29,452,740	1.33x	15.9%	7.5%	8.3%
NYC Asset Investor #1 LLC (Vanbarton)	2013	6/2013	\$50,000,000	\$55,684,854	(\$13,961,343)	\$56,050,449	1.26x	7.7%	8.6%	-0.9%
NYC Asset Investor #2 LLC (Related)	2013	7/2013	\$75,000,000	\$71,982,093	(\$19,439,062)	\$93,756,365	1.57x	15.7%	6.7%	9.0%
NYC Asset Investor #3 LLC (Hudson)	2013	9/2013	\$50,000,000	\$30,403,037	(\$5,232,494)	\$34,044,015	1.29x	11.6%	8.9%	2.8%

## New York City Employees' Retirement System

Second Quarter 2018

Investment	Vintage Year	First Draw-down	Committed Capital	Contributions	Distributions	Market Value	Multiple	IRR <sup>1</sup>	PME <sup>2</sup>	PME Spread <sup>3</sup>
Carlyle Realty Partners VII	2014	7/2014	\$80,000,000	\$64,657,111	(\$27,338,899)	\$57,175,519	1.35x	15.4%	7.0%	8.4%
Divco West Fund IV	2014	1/2014	\$23,000,000	\$22,334,462	(\$32,028,057)	\$5,077,263	1.66x	26.8%	7.5%	19.2%
H/2 Special Opportunities Fund III	2014	12/2014	\$65,000,000	\$65,000,000	(\$22,756,872)	\$59,368,865	1.25x	13.1%	7.5%	5.6%
MetLife Core Property Fund	2014	7/2014	\$50,000,000	\$50,000,000	(\$7,691,432)	\$61,929,539	1.39x	10.4%	5.3%	5.1%
Almanac Realty Securities VII	2015	4/2015	\$65,000,000	\$42,296,971	(\$9,535,034)	\$43,073,196	1.22x	15.4%	4.9%	10.5%
Almanac Realty Securities VII (Sidecar IV)	2015	12/2015	\$20,000,000	\$10,063,793	(\$616,677)	\$12,192,151	1.27x	20.3%	7.1%	13.3%
Avanath Affordable Housing Fund II	2015	7/2015	\$8,000,000	\$7,873,753	(\$380,651)	\$10,618,957	1.40x	12.7%	7.6%	5.1%
Blackstone Real Estate Partners VIII	2015	8/2015	\$151,000,000	\$100,004,761	(\$35,006,831)	\$91,735,251	1.27x	16.9%	7.6%	9.3%
European Property Investors Special Opp IV	2015	12/2015	\$49,178,496	\$25,740,480	(\$2,163,571)	\$26,975,880	1.14x	11.2%	9.9%	1.3%
USAA Eagle Real Estate Fund	2015	12/2015	\$60,000,000	\$63,241,106	(\$4,325,590)	\$69,696,498	1.18x	8.8%	7.1%	1.8%
Brookfield Premier Real Estate Partners	2016	11/2016	\$91,000,000	\$95,044,000	(\$4,044,000)	\$107,331,072	1.18x	12.5%	5.9%	6.6%
Divco West Fund V	2016	12/2016	\$60,000,000	\$21,584,197	(\$43,068)	\$21,902,022	1.02x	1.9%	9.3%	-7.4%
Exeter Industrial Core Club Fund II	2016	5/2016	\$28,000,000	\$14,784,000	(\$1,451,762)	\$15,819,558	1.16x	13.3%	6.6%	6.7%
Exeter Industrial Value Fund IV	2016	9/2017	\$30,000,000	\$9,000,000	\$0	\$9,660,255	1.07x	18.2%	8.5%	9.7%
H/2 Special Opportunities Fund IV	2016	11/2016	\$91,000,000	\$10,632,041	(\$740,287)	\$10,042,052	1.01x	1.1%	9.3%	-8.2%
Jamestown Premier Property Fund	2016	2/2016	\$48,721,196	\$42,844,093	(\$16,723,116)	\$34,591,789	1.20x	10.7%	6.9%	3.8%
NYCRS Artemis Co-Investment	2016	2/2016	\$53,000,000	\$43,972,521	(\$16,214,491)	\$37,045,686	1.21x	29.2%	6.9%	22.4%
Pramerica Real Estate Capital VI	2016	4/2017	\$61,649,200	\$24,322,419	(\$9,587,388)	\$18,451,658	1.23x	21.4%	8.8%	12.6%
PW Real Estate Fund III LP	2016	10/2016	\$46,748,831	\$22,083,174	(\$3,696,926)	\$27,322,554	1.40x	33.7%	9.3%	24.4%
Westbrook Real Estate Fund X Co-Investment	2016	7/2016	\$36,000,000	\$14,375,083	(\$2,134,737)	\$13,587,402	1.09x	10.8%	9.6%	1.1%
Basis Investment Group Real Estate Fund I	2017	11/2017	\$17,000,000	\$3,835,249	(\$260,851)	\$3,973,989	N/M	N/M	N/M	N/A
Carlyle Property Investors	2017	7/2017	\$91,000,000	\$92,996,266	(\$1,996,266)	\$95,255,984	1.05x	6.5%	5.5%	1.0%
DRA Growth and Income Fund IX	2017	3/2017	\$49,000,000	\$19,468,626	(\$4,128,671)	\$18,964,299	1.19x	24.0%	10.0%	14.0%
DRA Growth and Income Fund IX Co-investment	2017	N/A	\$17,000,000	\$0	\$0	\$0	N/A	N/A	N/A	N/A
Lion Industrial Trust - 2007	2017	1/2017	\$60,000,000	\$63,360,507	(\$3,360,507)	\$72,674,206	1.21x	14.4%	7.0%	7.4%
NYCRS-KKR CMBS Retention Partners	2017	9/2017	\$122,000,000	\$67,350,239	(\$2,981,763)	\$67,005,169	1.04x	7.8%	8.5%	-0.8%
Brookfield Strategic Real Estate Partners III	2018	N/A	\$170,000,000	\$0	\$0	\$0	N/A	N/A	N/A	N/A
Heitman Core Real Estate Debt Income Trust	2018	N/A	\$45,000,000	\$0	\$0	\$0	N/A	N/A	N/A	N/A
KKR Real Estate Partners Americas II	2018	2/2018	\$118,700,000	\$10,672,030	\$0	\$11,648,459	N/M	N/M	N/M	N/A
<b>Exited Investments:</b>										
Canyon-Johnson Urban	2002	12/2002	\$15,000,000	\$13,742,215	(\$16,418,450)	\$0	1.20x	11.1%	8.2%	2.9%
Tishman Speyer Citigroup Alt Inv V&VI NYC	2004	12/2003	\$100,000,000	\$71,066,452	(\$261,908,690)	\$0	3.72x	63.2%	7.1%	56.1%
RREEF America REIT III - 1410	2007	10/2007	\$90,000,000	\$90,000,000	(\$51,156,568)	\$0	0.57x	-7.5%	6.4%	-13.9%
UrbanAmerica II	2007	1/2007	\$25,000,000	\$23,222,798	(\$2,626,813)	\$0	0.11x	-25.0%	6.9%	-31.9%
JPM Urban REN PTY FD	2008	12/2008	\$16,360,625	\$4,206,523	(\$4,206,523)	\$0	1.00x	0.0%	10.0%	-10.0%
BlackRock Carbon Capital III Co-Investments	2009	7/2009	\$40,000,000	\$43,757,162	(\$53,189,633)	\$0	1.24x	8.9%	9.0%	-0.1%
KTR Industrial Fund III	2013	6/2013	\$40,000,000	\$18,186,884	(\$28,372,400)	\$0	1.56x	40.5%	8.4%	32.1%
<b>Total Portfolio</b>			<b>\$4,928,877,109</b>	<b>\$4,485,578,952</b>	<b>(\$2,946,031,102)</b>	<b>\$3,442,140,614</b>	<b>1.46x</b>	<b>8.1%</b>	<b>7.5%</b>	<b>0.6%</b>

<sup>1</sup> Performance for funds with less than four quarters of activity is not meaningful.

IRRs presented are interim estimates and may not be indicative of the ultimate performance of fund investments due to a number of factors, such as the lack of industry valuation standards and the differences in the investment pace and strategy of various funds. Until a fund is liquidated, typically over 10 to 12 years, the IRR is only an interim estimated return. The IRR calculated in early years of a fund is not meaningful given the J-curve effect. The actual IRR performance of any fund is not known until all capital contributed and earnings have been distributed to the investor. The IRRs contained in this report are calculated a consultant to the New York City Employees' Retirement System, based on information provided by the general partners (e.g. cash flows and valuations). The IRR calculations and other information contained in this report have not been reviewed or confirmed by the general partners. The result of the IRR calculation may differ from that generated by the general partner or other limited partners. Differences in IRR calculations can be affected by cash-flow timing, the accounting treatment of carried interest, fund management fees, advisory fees, organizational fees, other fund expenses, sale of distributed stock, and valuations.

<sup>2</sup> Russell 3000 and Barclays Capital Aggregate Bond Index are blended at the ratios of 40/60, 60/40 and 50/50 for Core, Non-Core and Total Portfolio, respectively, except that BofA Merrill Lynch US High Yield Index is the benchmark for NYCRS-KKR CMBS Retention Partners, a non-core investment.

<sup>3</sup> Spread is calculated as IRR minus the Blended Benchmark for NYCRS.

Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve comparable results or avoid substantial losses.

## Infrastructure Quarterly Report (Public):



## Infrastructure Monitoring Report

For the period ended June 30, 2018

Report Prepared For:

New York City Employees' Retirement System



# Table of Contents

- I. Executive Summary .....1
  - Allocation Summary .....1
  - Performance Summary .....2
  - Portfolio Performance vs. Benchmarks.....3
  - Portfolio Diversification .....3
- II. Infrastructure Market Overview .....4
  - Market Overview.....4
  - Infrastructure Fundraising .....6
  - Major Transactions .....7
- III. Portfolio Review .....8
  - Quarterly Highlights .....8
    - Performance by Vintage Year .....9
    - Performance by Strategy and Industry Focus.....9
    - Performance by Geographic Focus.....9
  - Portfolio Diversification .....10
    - By Strategy, Geography and Industry Focus.....10
    - By Investment Manager .....10
  - Portfolio Cash Flow Analysis .....11
    - Quarterly Cash Flow Activity .....11
    - Annual Cash Flow Activity .....11
    - Net Funded and Unfunded Commitments by Vintage Year .....12
  - Portfolio Company-Level Analysis .....13
    - Geographic Exposure and Performance.....13
    - Industry Exposure and Performance .....13
    - Public Market Exposure.....14
- IV. Risk Management Matrix.....15

## Important Information

This document is meant only to provide a broad overview for discussion purposes. All information provided here is subject to change. This document is for informational purposes only and does not constitute an offer to sell, a solicitation to buy, or a recommendation for any security, or as an offer to provide advisory or other services by StepStone Group LP, StepStone Group Real Assets LP, StepStone Group Real Estate LP, Swiss Capital Invest Holding (Dublin) Ltd, Swiss Capital Alternative Investments AG or their subsidiaries or affiliates (collectively, "StepStone") in any jurisdiction in which such offer, solicitation, purchase or sale would be unlawful under the securities laws of such jurisdiction. The information contained in this document should not be construed as financial or investment advice on any subject matter. StepStone expressly disclaims all liability in respect to actions taken based on any or all of the information in this document.

This document is confidential and solely for the use of StepStone and the existing and potential clients of StepStone to whom it has been delivered, where permitted. By accepting delivery of this document, each recipient undertakes not to reproduce or distribute this document in whole or in part, nor to disclose any of its contents (except to its professional advisors), without the prior written consent of StepStone. While some information used in the document has been obtained from various published and unpublished third-party sources considered to be reliable, StepStone does not guarantee its accuracy or completeness and accepts no liability for any direct or consequential losses arising from its use. Thus, all such information is subject to independent verification by prospective investors.

The document is being provided based on the understanding that each recipient has sufficient knowledge and experience to evaluate the merits and risks of investing in private equity products. All expressions of opinion are intended solely as general market commentary and do not constitute investment advice or a guarantee of returns. All expressions of opinion are as of the date of this document, are subject to change without notice and may differ from views held by other businesses of StepStone. None of StepStone is undertaking to provide impartial investment advice, or to give advice in a fiduciary capacity, in connection with any investor's continued engagement of StepStone.

All valuations are based on current values provided by the general partners of the underlying funds and may include both realized and unrealized investments. Due to the inherent uncertainty of valuation, the stated value may differ significantly from the value that would have been used had a ready market existed for all of the portfolio investments, and the difference could be material. The long-term value of these investments may be lesser or greater than the valuations provided.

StepStone Group LP, its affiliates and employees are not in the business of providing tax, legal or accounting advice. Any tax-related statements contained in these materials are provided for illustration purposes only and cannot be relied upon for the purpose of avoiding tax penalties. Any taxpayer should seek advice based on the taxpayer's particular circumstances from an independent tax advisor.

Prospective investors should inform themselves and take appropriate advice as to any applicable legal requirements and any applicable taxation and exchange control regulations in the countries of their citizenship, residence or domicile which might be relevant to the subscription, purchase, holding, exchange, redemption or disposal of any investments. Each prospective investor is urged to discuss any prospective investment with its legal, tax and regulatory advisors in order to make an independent determination of the suitability and consequences of such an investment.

An investment involves a number of risks and there are conflicts of interest.

Each of StepStone Group LP, StepStone Group Real Assets LP and StepStone Group Real Estate LP is an Investment Adviser registered with the Securities and Exchange Commission. StepStone Group Europe LLP is authorized and regulated by the Financial Conduct Authority, firm reference number 551580. Swiss Capital Invest Holding (Dublin) Ltd ("SCHIDL") is an SEC registered investment advisor and Swiss Capital Alternative Investments AG ("SCAI") (together SwissCap) is registered as a relying advisor with the SEC, such registrations does not imply a certain level of skill or training and no inference to the contrary should be made.

**Past performance is not necessarily indicative of future results. Actual performance may vary.**

## I. Executive Summary

New York City Employees' Retirement System ("NYCERS") established the Infrastructure Program (the "Program") in December of 2012 on behalf of its beneficiaries to participate in attractive long-term investment opportunities and to provide diversification to its overall pension investment portfolio.

The inclusion of infrastructure in the NYCERS pension portfolio allows for global investments in facilities or assets that provide core essential services critical to the operation and development of economies. Typically infrastructure investments have high barriers to entry due to significant capital expenditure requirements, exclusive long term contracts or regulatory requirements. Infrastructure investments are comprised of long useful-life assets with high tangible value and relatively low value erosion over time.

The Program seeks to invest in opportunities in a variety of infrastructure sectors, including but not limited to, transportation, energy, power, utilities, water, wastewater, communications and social infrastructure.

StepStone Group LP ("StepStone") was engaged by NYCERS on October 20, 2014 to provide infrastructure advisory services for prospective investment opportunities and monitoring and reporting services for existing and new investments.

Since inception through June 30, 2018, the Program has committed US\$893.8 million to 13 partnership investments (the "Portfolio"). This quarterly monitoring report covers the performance of the Portfolio as of June 30, 2018 as well as significant activity that occurred during the second quarter of 2018.

### Allocation Summary

NYCERS has an Infrastructure allocation target of 2% of total pension assets. As of June 30, 2018, the market value of NYCERS Infrastructure Program represented approximately 0.6% of total pension assets, a six basis point increase from the prior quarter.

As the Program matures, the percentage of its market value relative to the total NYCERS pension assets will continue to increase.

<i>US\$ in millions*</i>	June 30, 2018	March 31, 2018	June 30, 2017	Quarterly Change	Yearly Change
Total Pension Assets*	\$64,838.0	\$64,558.0	\$60,682.0	\$280.0	\$4,156.0
Total Infrastructure Assets	\$408.0	\$366.3	\$237.9	\$41.7	\$170.1
% Allocation to Infrastructure (Target of 2%)	0.6%	0.6%	0.4%	+6 bps	+ 24 bps

\*NYCERS total Pension Assets and total Infrastructure Assets are as of quarter-end (or, if not yet available, the most recent month-end prior to quarter-end) as reported by The New York City Comptroller's Office on [www.comptroller.nyc.gov](http://www.comptroller.nyc.gov)



## Performance Summary

As of June 30, 2018, the Infrastructure Program has achieved a Total Value to Paid-In multiple of 1.2x invested capital and an IRR of 13.1%. Note that, given the relative immaturity of the Portfolio and underlying fund investments, the current performance to-date is not meaningful.

<i>US\$ in millions</i> *	June 30, 2018	March 31, 2018	June 30, 2017	Quarterly Change	Yearly Change
Number of Managers	10	10	8	0	2
Number of Investments	13	13	9	0	4
Committed Capital <sup>1</sup>	\$893.8	\$896.4	\$654.3	(\$2.6)	\$239.5
Contributed Capital	\$383.6	\$349.0	\$222.8	\$34.6	\$160.8
Distributed Capital	\$64.8	\$61.9	\$34.6	\$2.9	\$30.2
Market Value	\$408.0	\$366.3	\$237.9	\$41.7	\$170.1
Total Value	\$472.8	\$428.2	\$272.5	\$44.6	\$200.3
Total Gain/(Loss)	\$89.2	\$79.2	\$49.7	\$10.0	\$39.5
Unfunded Commitment	\$547.3	\$583.0	\$444.8	(\$35.7)	\$102.5
Exposure <sup>2</sup>	\$955.3	\$949.3	\$682.7	\$6.1	\$272.7
DPI <sup>3</sup>	0.2x	0.2x	0.2x	0.0x	0.0x
TVPI <sup>4</sup>	1.2x	1.2x	1.2x	0.0x	0.0x
IRR <sup>5</sup>	13.1%	13.4%	13.1%	-0.3%	0.0%
TVPI Net of StepStone Fees <sup>6</sup>	1.2x	1.2x	1.2x	0.0x	0.0x
IRR Net of StepStone Fees <sup>6</sup>	13.0%	13.3%	13.0%	-0.3%	0.0%

\* Note that amounts may not total due to rounding. **Past performance is not necessarily indicative of future results and there can be no assurance that the investment will achieve comparable results or avoid substantial losses.**

<sup>1</sup> Committed Capital is presented net of any commitment releases or expirations and reflects foreign currency exchange rate fluctuations. Note that the Base/(US\$) committed capital for foreign currency-denominated investments as of respective quarter-end dates is calculated as follows: (total net amount funded in Base currency) + (unfunded commitment in Local currency \* quarter-end exchange rate). StepStone utilizes S&P Capital IQ as the source for quarter-end exchange rates to calculate committed capital.

<sup>2</sup> Exposure represents the sum of Market Value and Unfunded Commitment.

<sup>3</sup> DPI, or Distributed to Paid-In Multiple, is a performance metric that measures distributions received relative to capital invested. DPI is calculated as Distributed Capital divided by Contributed Capital.

<sup>4</sup> TVPI, or Total Value to Paid-In Multiple, is a performance metric that measures total value created by the Portfolio relative to capital invested, without consideration for time. TVPI is calculated as Total Value, which is comprised of Market Value plus Distributed Capital, divided by Contributed Capital.

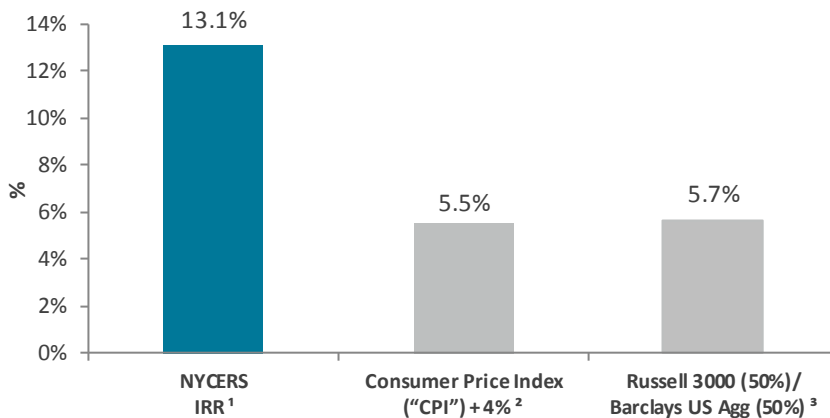
<sup>5</sup> IRR, or Internal Rate of Return, is a performance metric that is calculated based on the Portfolio's daily cash flows and market value as of quarter-end. IRR is net of fund managers' fees, expenses and carried interest.

<sup>6</sup> TVPI and IRR Net of StepStone fees represent TVPI and IRR net of fees paid by NYCERS to StepStone through the quarter-end date.

## Portfolio Performance vs. Benchmarks

The performance benchmark for the Infrastructure Portfolio is to meet or exceed the Consumer Price Index (“CPI”) plus 4% net of fees over a rolling 5-year period. The Infrastructure Portfolio’s performance is also measured against a dollar-weighted public benchmark, which produced the return that would have been earned if NYCERS’s infrastructure cash flows were invested in an index of 50% Russell 3000® and 50% Barclays U.S. Aggregate®. The Infrastructure Portfolio is expected to generate a total return, net of investment management fees, of at least 6.5%.

The following graph illustrates Portfolio IRR performance versus benchmarks as of June 30, 2018.



<sup>1</sup>NYCERS since inception Internal Rate of Return (“IRR”) is calculated based on the Portfolio’s daily cash flows and market value as of quarter-end. IRR is net of fund managers’ fees, expenses and carried interest. **Past performance is not necessarily indicative of future results.**

<sup>2</sup>Consumer Price Index (“CPI”) benchmark represents the compound annual growth rate of the Consumer Price Index for All Urban Consumers and All Items, as provided by the U.S. Department of Labor: Bureau of Labor Statistics, calculated over a five-year rolling period plus a 4.0% premium.

<sup>3</sup> Benchmark is a dollar-weighted PME+ calculation of daily changes in 50% of the Russell 3000® Index and 50% of the Barclays U.S. Aggregate® Index. These index comparisons are being provided solely for informational purposes as an indication of returns that could be earned by investors by making similar investments in the indexes and should not be relied upon for any purpose. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented.

## Portfolio Diversification

The Program’s objective is to build a Portfolio that is diversified by investment strategy, asset type, and geography. The target investment strategy ranges are as follows:

- Core Infrastructure Investments: 60% to 100%; and
- Non-Core Infrastructure Investments: 0% to 40%.

Actual percentages may differ substantially from these targets during the initial years of the Program. The following table illustrates the current diversification of the Portfolio by fund strategy, geography and industry focus.

As of June 30, 2018 (US\$ in millions)	Market Value		Unfunded Commitment		Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
<b>By Strategy:</b>						
Core	359.5	88.1%	469.8	85.8%	829.4	86.8%
Non-Core	48.5	11.9%	77.5	14.2%	125.9	13.2%
<b>Total</b>	<b>408.0</b>	<b>100.0%</b>	<b>547.3</b>	<b>100.0%</b>	<b>955.3</b>	<b>100.0%</b>
<b>By Geographic Focus:</b>						
Global	140.7	34.5%	166.1	30.3%	306.8	32.1%
North America	3.2	0.8%	79.3	14.5%	82.5	8.6%
OECD	264.1	64.7%	302.0	55.2%	566.1	59.3%
<b>Total</b>	<b>408.0</b>	<b>100.0%</b>	<b>547.3</b>	<b>100.0%</b>	<b>955.3</b>	<b>100.0%</b>
<b>By Industry Focus:</b>						
Diversified	360.5	88.3%	407.2	74.4%	767.7	80.4%
Energy	47.5	11.7%	140.1	25.6%	187.6	19.6%
<b>Total</b>	<b>408.0</b>	<b>100.0%</b>	<b>547.3</b>	<b>100.0%</b>	<b>955.3</b>	<b>100.0%</b>

## II. Infrastructure Market Overview

### Market Overview

#### North America

While US economic growth trends remain quite favorable, increased uncertainty around external trade policies and NAFTA negotiations complicate the outlook for North American GDP-linked assets. The US administration announced their infrastructure policy framework in Q1, but there is no clear immediate timing to pass specific legislation related to infrastructure.

The second quarter has seen an increased uptick in activity in the midstream sector in both the US and Canada, as the continued recovery in oil prices from the lows seen in 2014/2015 has resulted in an increase in drilling and a greater need for associated midstream infrastructure. MLPs have witnessed a dramatic increase in their cost of capital as a result of a federal ruling which eliminated specific tax allowances, leaving numerous companies in structures which are both cumbersome and no longer tax-advantaged. Notable midstream transactions include Global Infrastructure Partners' acquisition of Devon Energy's interests in EnLink Midstream, Brookfield's acquisition of natural gas gathering and processing assets from Enbridge in western Canada for C\$4.3 billion, and Morgan Stanley Infrastructure Partners' acquisition of Brazos Midstream for US\$1.8 billion. Further, the Canadian government acquired the Trans Mountain pipeline from Kinder Morgan to ensure the project would be built, as it was affected by inter-provincial legal challenges and delays. The asset is now being marketed by the government to investors since they do not wish to be a long-term owner of the project. Other select closed or announced transactions include the acquisition of a 62.5% stake in Global Container Terminals from Ontario Teachers' Pension Plan by a consortium composed of IFM and BclMC, the acquisition of American Roads portfolio by DIF for US\$220 million at a 12.6x implied EV/EBITDA multiple, the sale of Brooklyn Navy Yard, a cogeneration plant in the NYISO power market under a long-term PPA sold by Ares EIF to Axiom Infrastructure, and the sale of the Hudson Fiber Network for US\$220 million from Tiger Infrastructure to Stonepeak Infrastructure.

#### Europe

M&A activity in the second quarter was robust across a range of infrastructure sectors in Europe and the UK. In the transportation sector Ardian sold its 49% stake in London Luton Airport to AMP Capital in an all-equity transaction valuing the airport at c.£1 billion. Port terminals business, HES International, was also acquired by a consortium of Macquarie and Goldman Sachs during the quarter. The sale price was reported to be c.€1.3 billion or c.13x 2017 EBITDA. Also in the transport sector, Ardian announced that it has signed an agreement with Gruppo Gavio to purchase a 40% stake in its primarily Italian toll road portfolio, which includes 1,400+ kilometers of toll roads in Northwest Italy. The acquisition is expected to close in Q4 2018.

Activity in the telecommunications sector continued to be robust in the second quarter. Antin acquired the Spanish assets of fiber to the home ("FTTH") network operator Ufnet for a reported €2 billion or c.17x 2017 EBITDA. Earlier in the quarter, Antin and Goldman Sachs acquired UK FTTH business CityFibre at a 93% premium to the company's 42p LSE-listed share price. KKR acquired a 49.9% stake in Altice's French tower business, SFR TowerCo, for a reported 18.0x 2017 EBITDA. Altice's smaller Portuguese tower portfolio was sold to a consortium comprising Morgan Stanley Infrastructure Partners and Horizon Equity Partners for a reported 18.9x 2017 pro-forma EBITDA. Also during the quarter, Antin acquired French district heating firm IDEX for a reported purchase price of €1.3 billion, implying an estimated multiple of c.14x FY2019 EBITDA of €91 million. The acquisition was reported to be levered at c.8x FY2019 EBITDA, in-line with other recent transactions in the sector (e.g. Solor Bioenergy). In the power sector, National Grid sold its remaining 25% stake in Cadent to the Quadgas consortium, which last year bought 61% of Cadent.

#### Australia

During the quarter, there were a number of major transactions and developments in the renewables sector. Northleaf Capital Partners and InfraRed Capital Partners each acquired a 40% stake in the 228MW Lal Lal Wind Farms from Macquarie Capital for an undisclosed price. The project is located near Ballarat in Victoria and is currently under construction, comprising two

wind generation projects on 2,100 hectares of land. Also, CWP Renewables and Partners Group reached financial close on the A\$280 million 135MW Crudine Ridge Wind Farm project. The 37-turbine project is located 45km south of Mudgee and has secured a PPA with Meridian Energy Australia, with construction expected to be completed in September 2019. Following this transaction, Partners Group announced that it will invest A\$700 million over a four-year period in greenfield renewable projects in Australia alongside developer CWP Renewables via the newly created Grassroots Renewable Energy Platform. The platform will be seeded with the 270MW Sapphire Wind Farm and the 135MW Crudine Ridge Wind Farm. It is expected to have a total capacity of 1.3GW of renewable energy.

In power, IFM Investors sold its Ecogen Energy portfolio to EnergyAustralia for A\$205 million. The portfolio comprises two gas-fired power plants in Victoria with a combined capacity of 950MW. The assets are well known to EnergyAustralia and complement its portfolio by adding the flexibility of intermediate and peaking gas-fired generation. Also, AGL Energy sold its 81MW portfolio of gas and biomass assets in Queensland, Victoria and South Australia to Sustainable Energy Infrastructure, a consortium owned by MTAA Super and Commonwealth Bank Group Super. In utilities, Origin Energy sold its smart metering business, Acumen, to IntelliHUB for A\$267 million. IntelliHUB is a joint venture between Pacific Equity Partners and Landis+Gyr. The sale comes with a long-term agreement for the deployment and ongoing management of digital electricity meters to Origin's electricity customers. In water, AMP Capital acquired a further 50% interest in Riverland Water from Trility. The acquisition brings its interest in the asset to 100%.

### Infrastructure Fundraising

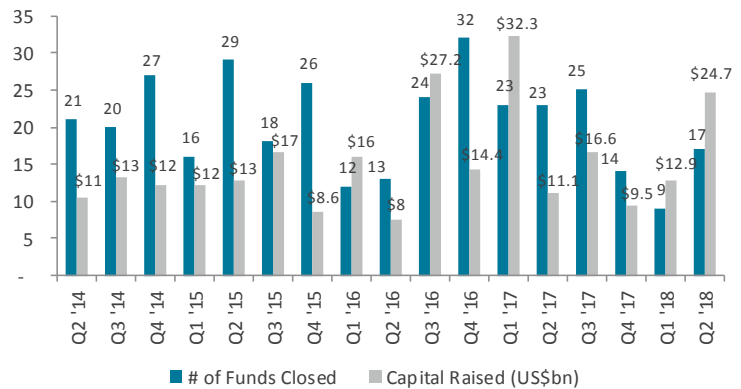
The level of institutional capital secured by unlisted infrastructure funds increased substantially from Q1 2018 to Q2 2018, both in terms of funds closed and capital raised.

Over the quarter, 17 funds held final closing with US\$24.7 billion of aggregate capital raised and is the highest amount of capital raised for a single quarter since Q1 2017. The amount represented almost a doubling of capital raised compared to Q2 2017, where US\$11.1 billion was raised, but with less funds closed. This indicates an increase in Q2 2018 in the size of unlisted infrastructure funds and greater concentration among fewer funds.

The largest fund to reach a final closing during Q2 2018 was ISQ Global Infrastructure Fund II, which raised US\$6.5 billion to invest in core-plus and value-add infrastructure globally. Other funds that closed this quarter include Macquarie Asia Infrastructure Fund II, which raised US\$3.3 billion and is focused on investing in infrastructure across Asia and Australia, Infracapital Partners III, which raised £1.85 billion and is focused on infrastructure investments in Europe, and DIF Infrastructure V, which raised €1.9 billion and is focused on global infrastructure. Preqin reports that infrastructure funds closed in H1 2018 achieved an average of 125% of their target size, indicating a robust fundraising environment.

**Unlisted Infrastructure Fundraising**

Source: Preqin

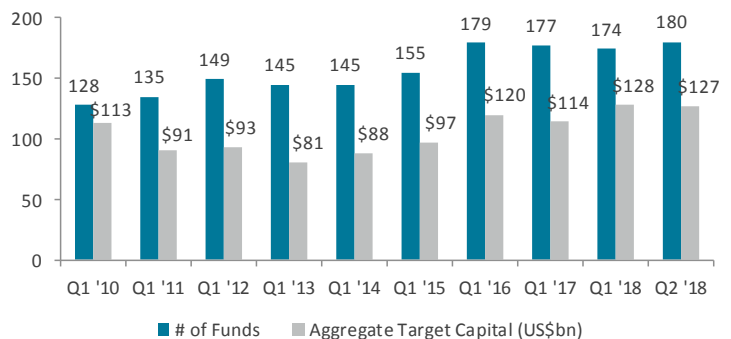


Fund	General Partner	Size (mn)	Location Focus
ISQ Global Infrastructure Fund II	I Squared Capital	\$ 6,500	Global
Macquarie Asia Infrastructure Fund II	Macquarie Infrastructure and Real Assets	\$ 3,300	Asia, Australasia
Infracapital Partners III	Infracapital	£ 1,850	Europe
DIF Infrastructure V	DIF	€ 1,900	Australasia, Europe, North America
Strategic Partners Real Assets II	Strategic Partners Fund Solutions	\$ 1,750	West Europe

At the end of the second quarter, Preqin observed 180 funds in market targeting aggregate capital commitments of US\$127 billion. The largest funds in market as of Q2 2018 include: KKR Global Infrastructure III target US\$7 billion, Energy Capital Partners IV targeting US\$6 billion, and EIG Energy Fund XVII targeting US\$5 billion.

**Unlisted Infrastructure Fundraising**

Source: Preqin



## Major Transactions

During the second quarter, there were 569 deals completed with an estimated aggregate deal value of US\$209 billion, representing a 16% decrease compared to the prior quarter, and 19% decrease compared to the first quarter of 2017. Aggregate deal size also decreased slightly to \$209 million. European and North American deals account for the majority of all infrastructure transactions in Q2 2018, while the renewable energy sector continued to represent a majority of completed. Notable deals are as below:

In April 2018, Macquarie and a group of Danish pension funds acquired Danish telecoms operator TDC for a reported value of €\$5.4 billion through a take-private process. The telecoms operator has more than 3 million mobile customers in Denmark as well as 1.7 million TV customers and 1.6 million broadband customers in Denmark and Norway.

In April 2018, IFM Investors closed on the acquisition of OHL Concesiones for a reported equity price of €2.2 billion. OHL Concesiones is a diversified portfolio of transportation infrastructure concessions with 19 assets across five countries including Spain, Chile, Peru and Colombia and is headquartered in Madrid, Spain.

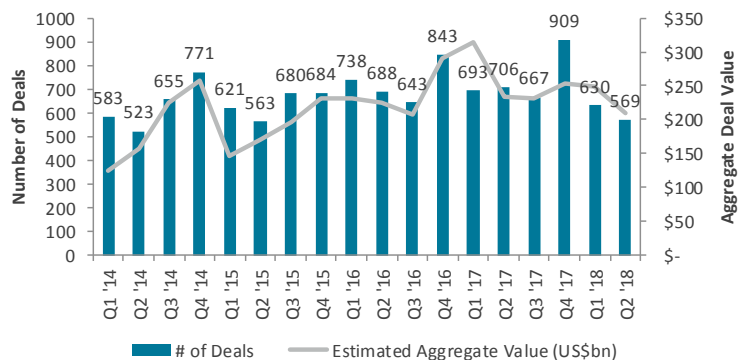
Also in April 2018, Global Infrastructure Partners III closed on the acquisition of Italian high-speed train operator Nuovo Trasporto Viaggiatori S.p.A. (“Italo”) for a reported €2.0 billion. Italo owns and operates 25 11-carriage AGV575 Alstom high speed trains. They link 19 stations in 14 cities, including Rome, Salerno, Turin, Milan, Brescia and Venice.

In June 2018, a consortium including First State European Diversified Infrastructure and Hermes Infrastructure acquired 65% of ferry company Scandlines from 3i Group for a reported enterprise value €\$2.6 billion. Scandlines operates two short-distance, high-frequency ferry routes between Germany and Denmark providing a critical transport link between Scandinavia and Germany and the rest of Continental Europe.

In June 2018, Dalmore-led consortium including Fiera Infrastructure, Semperian PPP Investment partners and Swiss Life Asset Managers acquired Cory Riverside for a reported £1.5 billion from Strategic Value Partners. Cory Riverside collects waste from local authorities and businesses across London and transports it by boat to its energy from waste facility in Belvedere on the eastern edge of London. The waste is burned to produce enough electricity to power 160,000 households, with the remaining ash recycled to make materials for the construction industry.

Quarterly Global Infrastructure Deal Flow

Source: Preqin



Source: InfraNews, S&P CapIQ, StepStone analysis

### III. Portfolio Review

#### Quarterly Highlights

- **No New Investment Commitments** – There were no new investment commitments made during the quarter.
- **Subsequent Investment Commitments** – Subsequent to quarter-end, the Program closed on one new investment commitment totaling US\$87.5 million. This is shown in the table below.

US\$ in millions

Investment	Month and Year Closed	Vintage Year	Strategy	Geographic Focus	Industry Focus	Committed Capital
Global Energy & Power Infrastructure Fund III,	July 2018	2018	Infrastructure	OECD	Energy	\$87.5
<b>Total</b>						<b>\$87.5</b>

- **Cash Outflow Increased** – During the second quarter of 2018, the Program made US\$34.6 million of contributions and received US\$2.9 million of distributions, for a net cash outflow of US\$31.7 million. This compared to a net cash outflow of US\$13.8 million during the prior quarter.
- **Valuation Increased** – During the second quarter of 2018, net of cash flow activity, the valuation of the Portfolio increased by approximately US\$10.0 million, or 2.5%, from the prior quarter. The valuation increase primarily reflects the increase in value of underlying investments in EQT Infrastructure III (No. 2) SCSp.
- **New Underlying Fund Investments** – During the second quarter of 2018, four new investment positions were added to the Portfolio.

US\$ in millions

Company	Fund(s)	Investment Date	Stage	Industry	Country	Exposed Invested Capital	Exposed Market Value	TVM
Saavi Energia	Actis Energy 4	Apr-18	Private	Renewables	Mexico	7.3	7.3	1.0x
ASF Patriot Feeder	ASF VII Infrastructure L.P.	May-18	Private	Other	United States	3.1	3.0	1.0x
Broadnet	EQT Infrastructure III (No.2) SCSp	May-18	Private	Telecom	Norway	7.0	7.0	1.0x
Italo –Nuovo Tras. Viaggiatori S.p.A.	Global Infrastructure Partners III, L.P.	May-18	Private	Transportation	Italy	15.3	15.3	1.0x

- **Company Exits** – During the second quarter of 2018, one position exited the Portfolio.

US\$ in millions

Company	Fund(s)	Investment Date	Exit Date	Stage	Industry	Country	Invested Capital	Total Value	TVM
Freeport Investment Notes 2	IFM Global Infrastructure Fund	Dec-17	May-18	Private	Midstream	United States	0.9	1.0	1.1x

### Performance by Vintage Year

The following table illustrates the Portfolio's since-inception investment performance by vintage year as of June 30, 2018. Note that the performance of funds that are less than two years old is not meaningful.

As of June 30, 2018 (US\$ in millions)

Vintage Year	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Total Value	Total Gain/ (Loss)	Unfunded Commitment	Exposure	DPI	TVPI	IRR
2013	\$75.0	\$59.9	\$13.3	\$71.0	\$84.3	\$24.3	\$17.3	\$88.3	0.2x	1.4x	12.8%
2014	197.0	190.5	43.2	200.7	244.0	53.5	32.2	233.0	0.2x	1.3x	13.9%
2016	261.3	97.3	3.6	99.2	102.8	5.5	168.6	267.8	0.0x	1.1x	5.9%
2017	256.5	35.8	4.7	37.1	41.8	5.9	225.2	262.3	NM	NM	NM
2018	104.0	-	-	-	-	-	104.0	104.0	NM	NM	NM
<b>2018</b>	<b>\$893.8</b>	<b>\$383.6</b>	<b>\$64.8</b>	<b>\$408.0</b>	<b>\$472.8</b>	<b>\$89.2</b>	<b>\$547.3</b>	<b>\$955.3</b>	<b>0.2x</b>	<b>1.2x</b>	<b>13.1%</b>

### Performance by Strategy and Industry Focus

The following table illustrates the Portfolio's since-inception investment performance by strategy and industry focus as of June 30, 2018.

As of June 30, 2018 (US\$ in millions)

Strategy/Industry	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Total Value	Total Gain/ (Loss)	Unfunded Commitment	Exposure	DPI	TVPI	IRR
<b>Core</b>	<b>\$772.5</b>	<b>\$337.7</b>	<b>\$62.5</b>	<b>\$359.5</b>	<b>\$422.0</b>	<b>\$84.3</b>	<b>\$469.8</b>	<b>\$829.4</b>	<b>0.2x</b>	<b>1.2x</b>	<b>12.9%</b>
Diversified	645.2	302.1	41.7	331.1	372.8	70.7	375.0	706.1	0.1x	1.2x	11.4%
Energy	127.4	35.6	20.8	28.5	49.2	13.6	94.8	123.3	0.6x	1.4x	42.1%
<b>Non-Core</b>	<b>121.3</b>	<b>45.9</b>	<b>2.3</b>	<b>48.5</b>	<b>50.8</b>	<b>4.9</b>	<b>77.5</b>	<b>125.9</b>	<b>0.1x</b>	<b>1.1x</b>	<b>20.2%</b>
Diversified	57.0	26.9	2.3	29.4	31.7	4.9	32.2	61.6	0.1x	1.2x	51.5%
Energy	64.3	19.1	0.0	19.1	19.1	0.0	45.2	64.3	0.0x	1.0x	0.2%
<b>Total</b>	<b>\$893.8</b>	<b>\$383.6</b>	<b>\$64.8</b>	<b>\$408.0</b>	<b>\$472.8</b>	<b>\$89.2</b>	<b>\$547.3</b>	<b>\$955.3</b>	<b>0.2x</b>	<b>1.2x</b>	<b>13.1%</b>

### Performance by Geographic Focus

The following table and charts illustrate the Portfolio's since-inception investment performance by geographic focus as of June 30, 2018.

As of June 30, 2018 (US\$ in millions)

Geographic Focus	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Total Value	Total Gain/ (Loss)	Unfunded Commitment	Exposure	DPI	TVPI	IRR
Global	\$287.3	\$125.6	\$17.7	\$140.7	\$158.4	\$32.9	\$166.1	\$306.8	0.1x	1.3x	13.3%
North America	82.4	3.2	0.1	3.2	3.3	0.1	79.3	82.5	0.0x	1.0x	4.9%
OECD	524.2	254.9	47.0	264.1	311.1	56.3	302.0	566.1	0.2x	1.2x	13.0%
<b>Total</b>	<b>\$893.8</b>	<b>\$383.6</b>	<b>\$64.8</b>	<b>\$408.0</b>	<b>\$472.8</b>	<b>\$89.2</b>	<b>\$547.3</b>	<b>\$955.3</b>	<b>0.2x</b>	<b>1.2x</b>	<b>13.1%</b>

\*Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve comparable results or avoid substantial losses.



## Portfolio Diversification

### By Strategy, Geography and Industry Focus

The Program’s objective is to build a Portfolio that is diversified by investment strategy, asset type, and geography. The target investment strategy ranges are as follows:

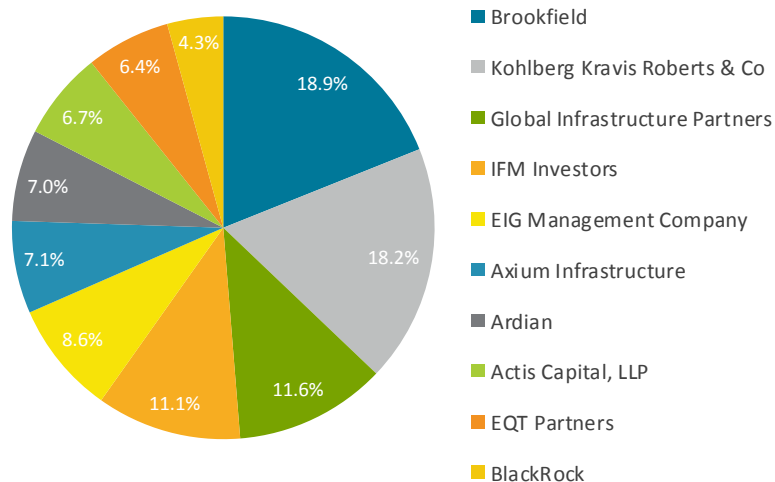
- Core Infrastructure Investments: 60% to 100%; and
- Non-Core Infrastructure Investments: 0% to 40%.

Actual percentages may differ substantially from these targets during the initial years of the Program. The following table illustrates the current diversification of the Portfolio by fund strategy, geography and industry focus.

As of June 30, 2018 (US\$ in millions)	Market Value		Unfunded Commitment		Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
<b>By Strategy:</b>						
Core	359.5	88.1%	469.8	85.8%	829.4	86.8%
Non-Core	48.5	11.9%	77.5	14.2%	125.9	13.2%
<b>Total</b>	<b>408.0</b>	<b>100.0%</b>	<b>547.3</b>	<b>100.0%</b>	<b>955.3</b>	<b>100.0%</b>
<b>By Geographic Focus:</b>						
Global	140.7	34.5%	166.1	30.3%	306.8	32.1%
North America	3.2	0.8%	79.3	14.5%	82.5	8.6%
OECD	264.1	64.7%	302.0	55.2%	566.1	59.3%
<b>Total</b>	<b>408.0</b>	<b>100.0%</b>	<b>547.3</b>	<b>100.0%</b>	<b>955.3</b>	<b>100.0%</b>
<b>By Industry Focus:</b>						
Diversified	360.5	88.3%	407.2	74.4%	767.7	80.4%
Energy	47.5	11.7%	140.1	25.6%	187.6	19.6%
<b>Total</b>	<b>408.0</b>	<b>100.0%</b>	<b>547.3</b>	<b>100.0%</b>	<b>955.3</b>	<b>100.0%</b>

### By Investment Manager

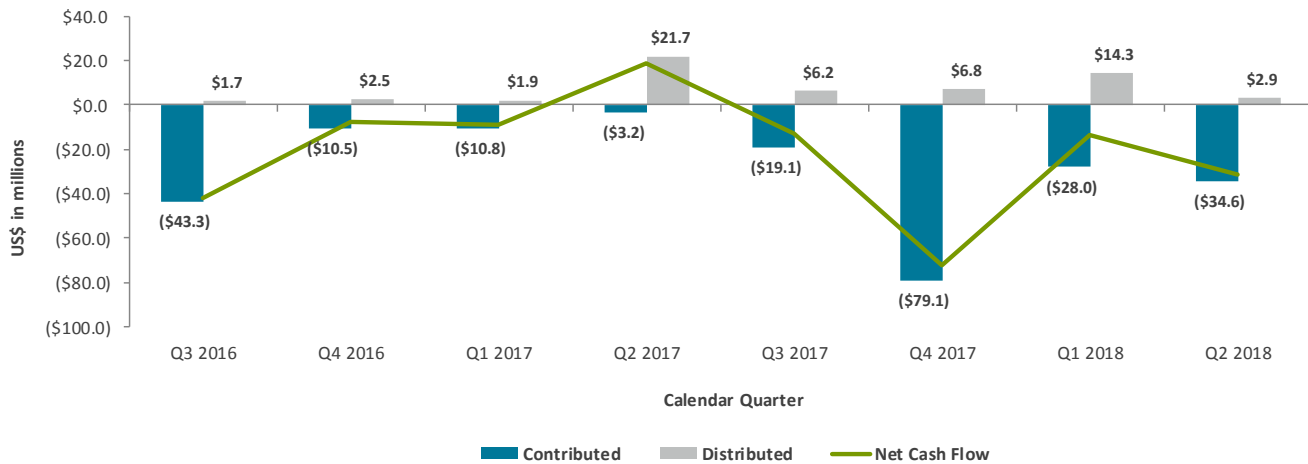
As of June 30, 2018, the Program had made 13 investment commitments to ten managers. NYCERS seeks to limit its exposure to any single manager to no more than 10% of the total Real Assets Program when fully invested. As the Program matures and closes on additional commitments, the single manager exposure is expected to decline significantly. Below is the Portfolio’s current exposure by manager.



## Portfolio Cash Flow Analysis

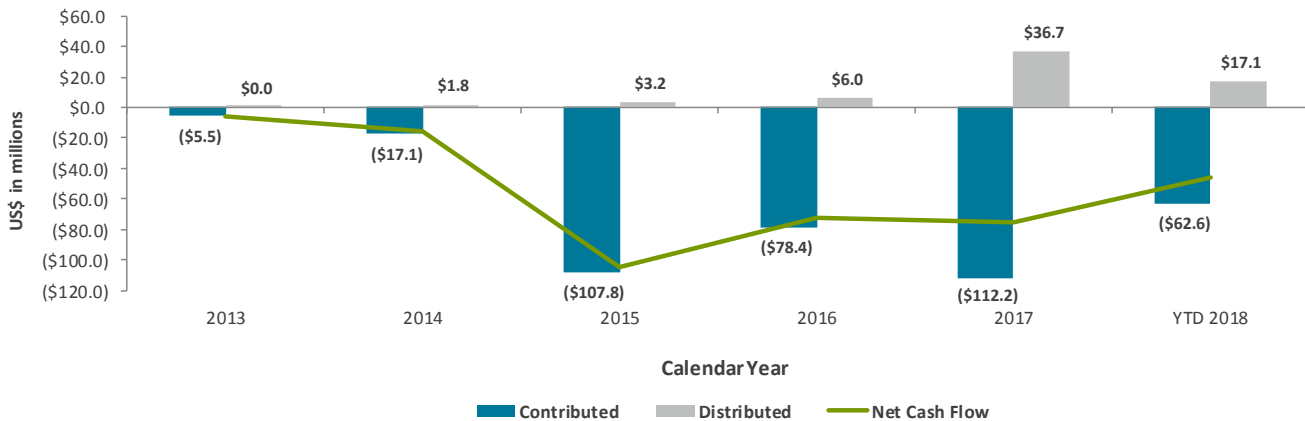
### Quarterly Cash Flow Activity

During the second quarter of 2018, the Program made US\$34.6 million of contributions and received US\$2.9 million of distributions, for a net cash outflow of US\$31.7 million. As of June 30, 2018, ten fund investments in the Portfolio had cash flow activity. As the Program's commitment and investment activity increases, net cash outflow is expected to increase. The graph below illustrates cash flow activity since inception by calendar quarter.



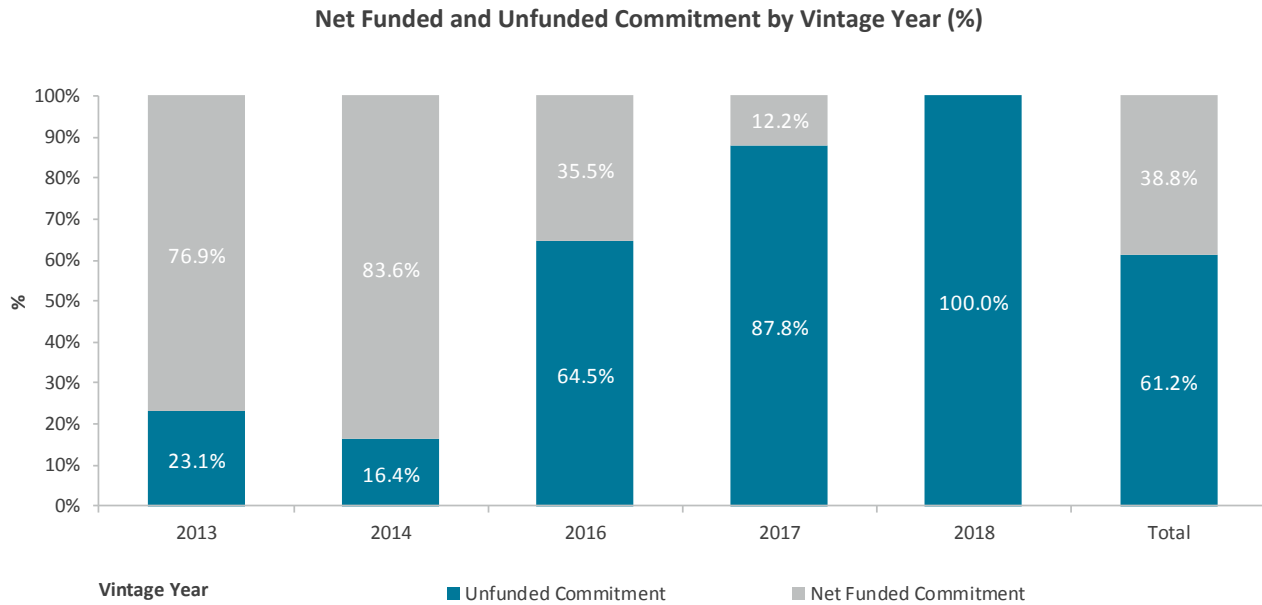
### Annual Cash Flow Activity

During the first six months of 2018, the Program made US\$62.6 million of contributions and received US\$17.1 million of distributions, for a net cash outflow of US\$45.5 million. The graph below illustrates cash flow activity since inception by calendar year.

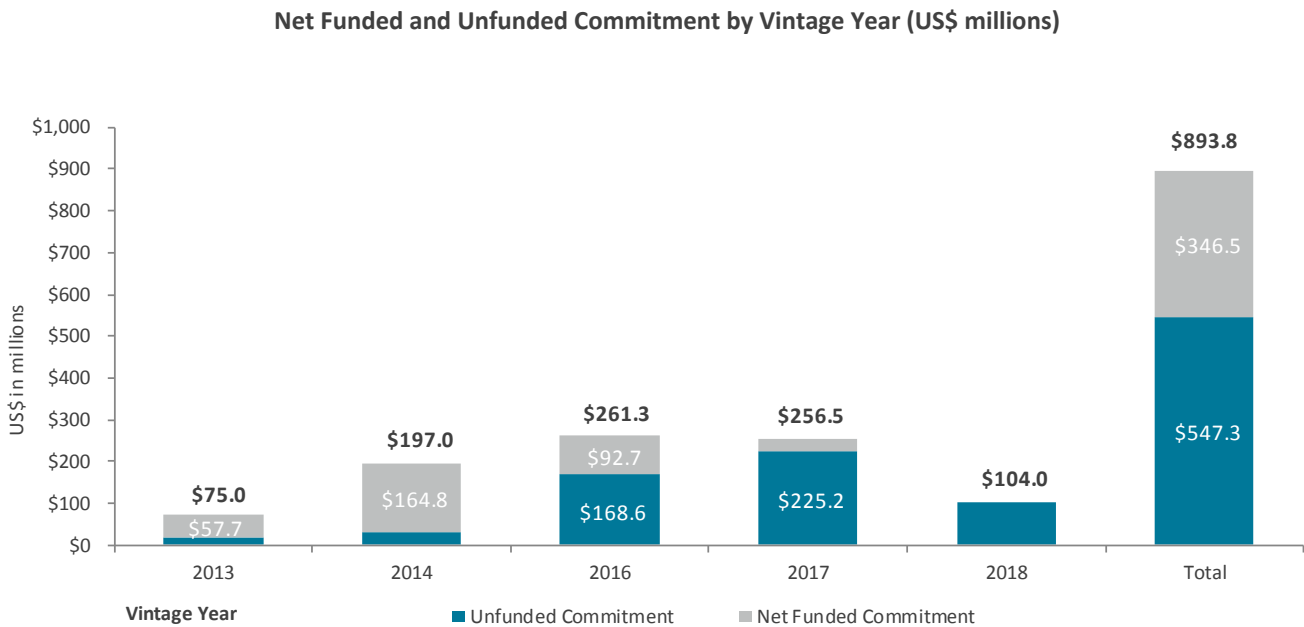


**Net Funded and Unfunded Commitments by Vintage Year**

The following chart illustrates the Portfolio’s net funded commitments (defined as total contributions inside commitment less any returns of excess capital and recallable distributions) as a percentage of total capital commitments, by fund vintage year, as of June 30, 2018. Overall, the Portfolio was 61.2% unfunded as of quarter-end.



The following chart illustrates the Portfolio’s net funded commitments relative to total capital commitments, by fund vintage year, as of June 30, 2018. Overall, the Portfolio had US\$547.3 million of unfunded commitments as of quarter-end.

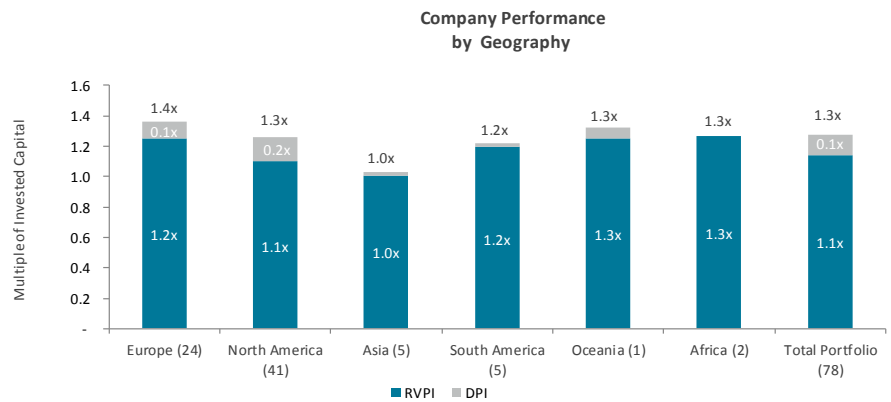
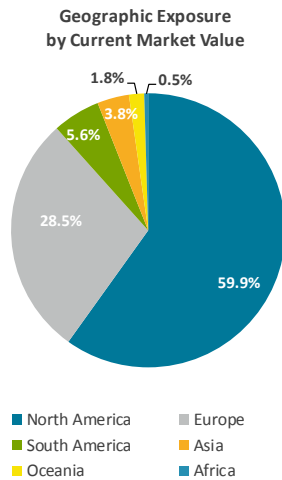


## Portfolio Company-Level Analysis

As of quarter-end, the Portfolio had exposure to 78 unique unrealized portfolio companies/investment positions. As the Portfolio matures, the number of unique portfolio companies/investment positions is expected to increase significantly. On the individual fund level, all current investments are within the single investment limitation of 15% of total fund size. The Program's individual portfolio investment exposure is relatively concentrated as a result of the relative immaturity of the Program.

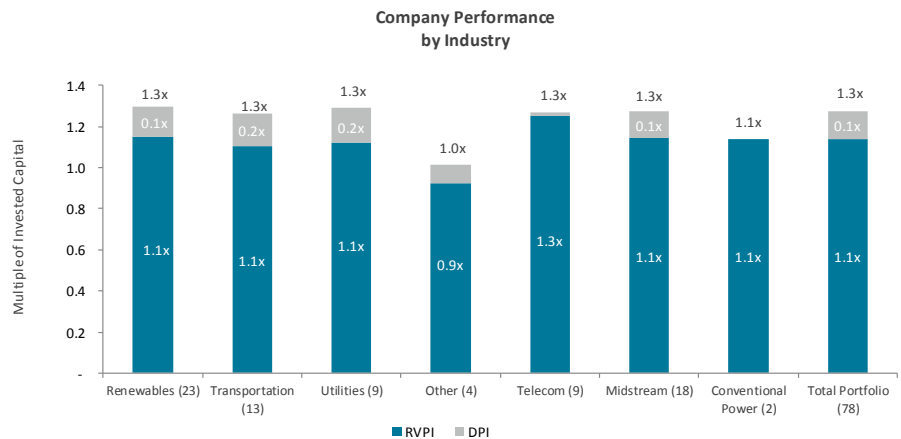
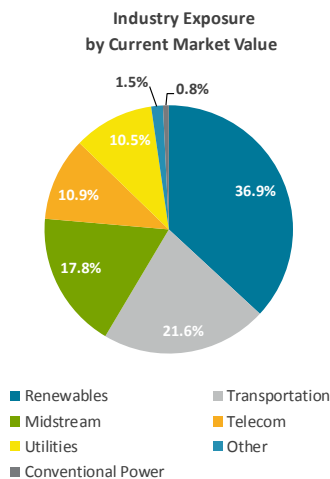
### Geographic Exposure and Performance

The following charts illustrate the Portfolio's current exposure and performance by geographic region at the portfolio company level.



### Industry Exposure and Performance

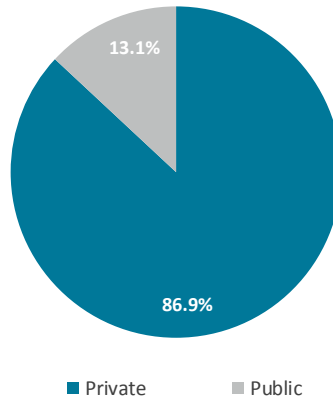
The following charts illustrate the Portfolio's current exposure and performance by industry at the portfolio company level.



### Public Market Exposure

As of quarter-end, publicly traded investments comprised 13.1% of the Portfolio's exposed market value. The following chart illustrates the current public market exposure at the portfolio company level.

**Public Market Exposure Current Market Value**



## IV. Risk Management Matrix

Category	Requirement	Status	Status Notes
<b>Allocation</b>	NYCERS has an Infrastructure allocation target of 2% of total pension assets.	✓	<p>The market value of NYCERS Infrastructure Program represents approximately 0.6% of total pension assets.</p> <p>As the Program matures, its market value as a percentage of the total NYCERS pension assets and the total Real Assets Program is expected to increase.</p>
<b>Performance vs. Benchmarks</b>	<p>The performance benchmark for the Infrastructure Portfolio is to meet or exceed: (i) The Consumer Price Index (“CPI”) plus 4% net of fees over a rolling 5-year period and (ii) A dollar-weighted PME+ (“PME”) calculation of daily changes in 50% of the Russell 3000® Index and 50% of the Barclays U.S. Aggregate® Index.</p> <p>The Infrastructure Portfolio is expected to generate a total return, net of investment management fees, of at least 6.5%.</p>	✓	<p>As of June 30, 2018, the Portfolio outperformed the CPI and PME benchmark by 7.5% and 7.4%, respectively.</p> <p>However, given the relative immaturity of the Portfolio, the current performance to-date versus benchmarks is not meaningful.</p>
<b>Strategy Diversification</b>	<p>Core Infrastructure Investments: 60-100% Non-Core Infrastructure Investments: 0-40%</p> <p>Actual percentages may differ substantially from these targets during the initial years of the Program.</p>	✓	<p>The Program is in compliance with the Core/Non-Core allocation ranges. Currently the Program has 86.8% exposure to Core investments and 13.2% exposure to Non-Core investments.</p>
<b>Asset Type &amp; Location Diversification</b>	<p>The Program will seek diversification by asset type, revenue drivers, and geography. The portfolio may include a variety of assets including but not limited to electricity transmission, pipelines, airports, toll roads, communication towers and electric generators, windmills etc. to vary the sources of revenue to the portfolio.</p>	✓	<p>Given the relative immaturity of the Portfolio, it is not yet diversified by asset type.</p> <p>The asset types and geographic location of current Portfolio investments are in compliance with the Program’s Investment Policy Statement and Permissible Markets.</p>
<b>Leverage</b>	<p>The average leverage of all investments in the Program is to be no higher than 65%.</p>	✓	<p>The Program is in compliance with the average leverage limitation. The current leverage level is 39.7%<sup>1</sup>.</p>
<b>Single Investment Size &amp; Manager Diversification</b>	<p>The maximum commitment to a single investment is limited to no more than 15% of the aggregate committed capital of each fund.</p> <p>The maximum commitment to a single manager is limited to 10% of the total Real Assets Program allocation when fully invested.</p>	✓	<p>On the individual fund level, all current investments are in compliance with the single investment limitation of 15% of total fund size.</p> <p>The Program is in compliance with the single manager limitation of 10% of the total Infrastructure Program.</p> <p>The Program’s manager exposure is currently relatively concentrated as a result of the relative immaturity of the Program. Manager diversification is expected to increase as the Program closes on new investment commitments.</p>

<sup>1</sup>The Program’s leverage level is calculated by using a weighted average of each underlying investment’s leverage and Net Asset Value as of June 30, 2018.

**New York City Employees' Retirement System**  
**Infrastructure Portfolio**  
**As of June 30, 2018**

Vintage Year	Investment	Closing Date	Committed Capital	Contributed Capital	Distributed Capital	Market Value	TVPI	IRR
<b>Active Investments:</b>								
2013	Brookfield Infrastructure Fund II, L.P.	7/8/2013	\$75,000,000	\$59,949,439	\$13,294,173	\$70,959,638	1.4x	12.8%
2014	KKR Global Infrastructure Investors II L.P.	6/12/2015	77,000,000	67,098,041	6,609,798	69,509,483	1.1x	10.2%
2014	IFM Global Infrastructure Fund	1/2/2014	75,000,000	90,942,097	15,942,097	105,957,598	1.4x	11.7%
2014	Global Energy & Power Infrastructure Fund II	4/16/2014	45,000,000	32,414,426	20,688,643	25,265,891	1.4x	43.9%
2016	Global Infrastructure Partners III-A/B, L.P.	1/29/2016	106,000,000	58,586,006	1,511,172	58,836,055	1.0x	3.7%
2016	Brookfield Infrastructure Fund III, L.P.	4/15/2016	91,000,000	19,692,061	2,073,013	21,302,368	1.2x	11.7%
2016	Actis Energy 4	12/16/2016	64,300,000	19,055,674	3,346	19,076,000	NM	NM
2017	NYCRS EIG Energy Partners, L.P.	8/14/2017	65,880,000	3,163,545	68,754	3,195,482	NM	NM
2017	EQT Infrastructure III (No.2) SCSp	2/18/2017	56,971,704	26,873,796	2,337,792	29,391,900	NM	NM
2017	Axiom Infrastructure North America	8/14/2017	67,683,204	1,309,033	-	1,078,906	NM	NM
2017	ASF VII Infrastructure L.P.	4/24/2017	66,000,000	4,503,530	2,273,032	3,436,492	NM	NM
2018	NYCRS EIG Energy Partners Co-Investment, L.P.	1/12/2018	16,470,000	-	-	-	NM	NM
2018	KKR Global Infrastructure Investors III L.P.	3/29/2018	87,500,000	-	-	-	NM	NM
<b>Total</b>			<b>\$893,804,908</b>	<b>\$383,587,647</b>	<b>\$64,801,821</b>	<b>\$408,009,813</b>	<b>1.2x</b>	<b>13.1%</b>

Note: IRRs presented are interim estimates and may not be indicative of the ultimate performance of fund investments due to a number of factors, such as the lack of industry valuation standards and the differences in the investment pace and strategy of various funds. Until a fund is liquidated, typically over 10 to 12 years, the IRR is only an interim estimated return. The IRR calculated in the early years of a fund is usually not meaningful given the J-Curve effect. The actual IRR performance of any fund is not known until all capital contributed and earnings have been distributed to the investor. The IRRs contained in this report are calculated by StepStone Group LP, a consultant to the New York City Retirement Systems, based on information provided by the general partners of each investment (e.g. cash flows and valuations). The IRR calculations and other information contained in this report have not been reviewed or confirmed by the general partners. The result of the IRR calculation may differ from that generated by the general partner or other limited partners. Differences in IRR calculations can be affected by cash-flow timing, the accounting treatment of carried interest, fund management fees, advisory fees, organizational fees, other fund expenses, sale of distributed stock, and valuations.

**Risk Quarterly Report (Public):**



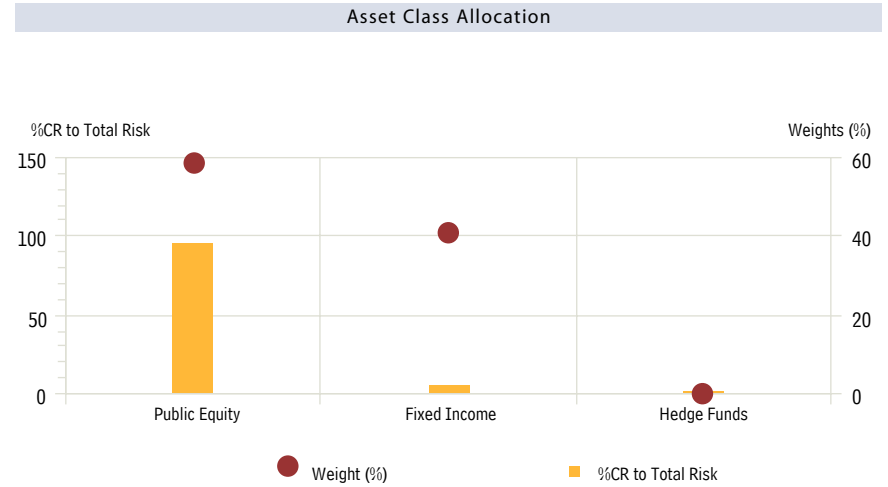
# BarraOne Total Plan Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: NYCERS - Total Plan  
 BENCHMARK: NYCERS\_POLICY  
 POSITIONS: 26,558

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 54,764,188,586  
 ACCEPTED: 26,282

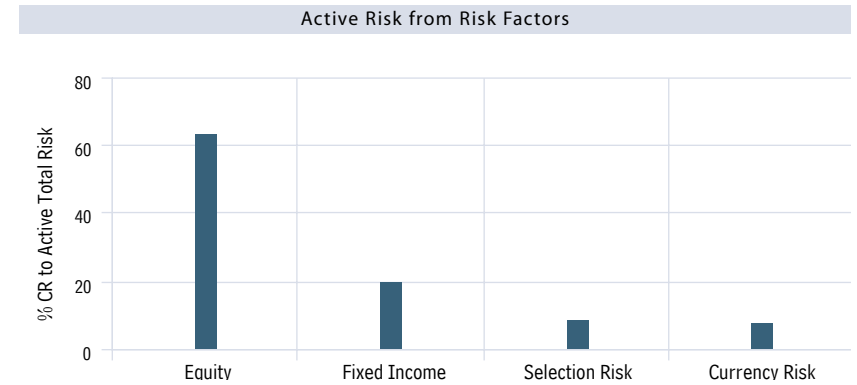
## Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	6.39	<b>Total</b>	<b>54,764,188,586</b>	<b>100.00</b>	<b>6.39</b>	<b>6.39</b>	<b>100.00</b>
Benchmark Risk	6.80	Public Equity	32,296,037,277	58.97	10.49	6.11	95.58
Active Risk	0.52	Fixed Income	22,429,891,502	40.96	2.53	0.28	4.41
Portfolio Beta	0.94	Hedge Funds	38,259,808	0.07	7.14	0.00	0.02
Effective Duration	2.18						



## Risk Factor Breakdown

Risk Source	Risk Decomposition			Risk Decomposition		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
<b>Total Risk</b>	<b>6.39</b>	<b>100.00</b>	<b>1.00</b>	<b>0.52</b>	<b>100.00</b>	<b>1.00</b>
Local Market Risk	5.78	90.40	0.98	0.48	91.80	0.97
Common Factor Risk	5.75	89.94	0.98	0.44	83.14	0.92
Equity	5.53	86.52	0.96	0.33	63.39	0.77
Fixed Income	0.22	3.42	0.21	0.10	19.75	0.41
Selection Risk	0.03	0.46	0.07	0.05	8.66	0.29
Currency Risk	0.61	9.60	0.50	0.04	8.20	0.33



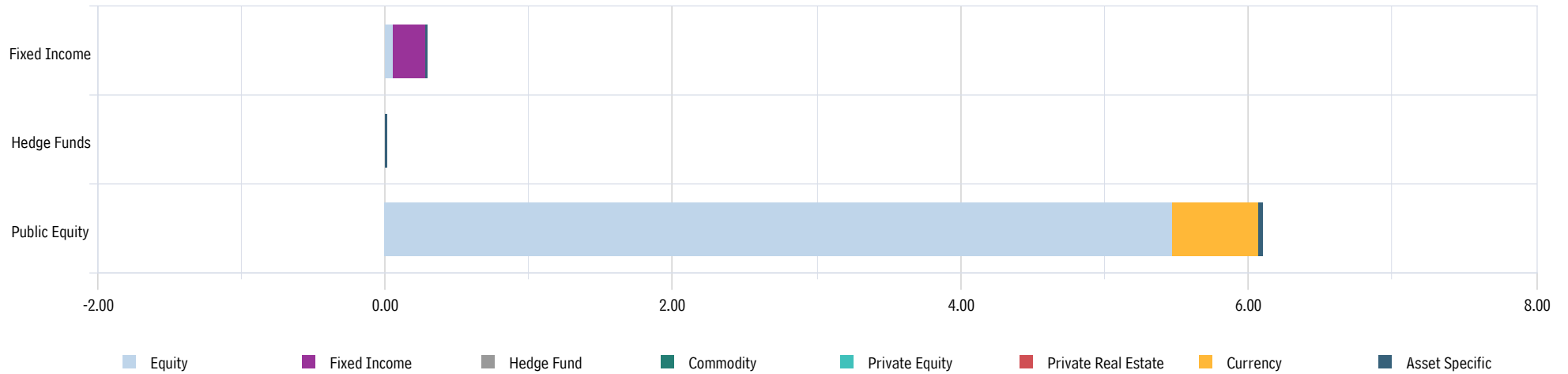
# BarraOne Total Plan Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: NYCERS - Total Plan  
 BENCHMARK: NYCERS\_POLICY  
 POSITIONS: 26,558

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 54,764,188,586  
 ACCEPTED: 26,282

## Risk Contribution Breakdown by Risk Type

Asset Name	Mkt Value	Weight (%)	Eff Weight (%)	Total Risk	%CR to Total Risk	Port Risk Contribution	Risk Contribution									
							Equity	Fixed Income	Hedge Fund	Commodity	Private Real Estate	Private Equity	Currency	Asset Specific		
<b>Total</b>	<b>54,764,188,586</b>	<b>100.00</b>	<b>100.00</b>	<b>6.39</b>	<b>100.00</b>	<b>6.39</b>	<b>5.53</b>	<b>0.22</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.61</b>	<b>0.03</b>
Fixed Income	22,429,891,502	40.96	40.96	2.53	4.41	0.28	0.06	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hedge Funds	38,259,808	0.07	0.07	7.14	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	0.00
Public Equity	32,296,037,277	58.97	58.97	10.49	95.58	6.11	5.46	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.03



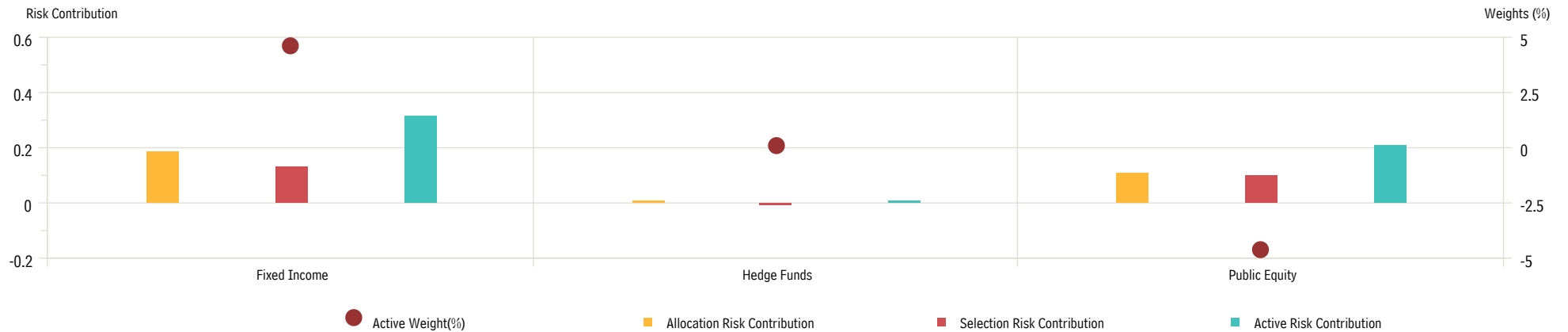
# BarraOne Total Plan Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: NYCERS - Total Plan  
 BENCHMARK: NYCERS\_POLICY  
 POSITIONS: 26,558

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 54,764,188,586  
 ACCEPTED: 26,282

## Allocation Selection

Asset Class	Active Weight(%)	Allocation			Selection			Active
		Volatility	Correlation	Risk Contribution	Volatility	Correlation	Risk Contribution	Risk Contribution
<b>Active Total Risk</b>				<b>0.29</b>			<b>0.23</b>	<b>0.52</b>
Fixed Income	4.59	6.94	0.57	<b>0.18</b>	1.02	0.31	<b>0.13</b>	<b>0.31</b>
Hedge Funds	0.07	6.80	0.80	<b>0.00</b>	7.14	-0.13	<b>-0.00</b>	<b>0.00</b>
Public Equity	-4.66	3.97	-0.57	<b>0.11</b>	0.45	0.39	<b>0.10</b>	<b>0.21</b>



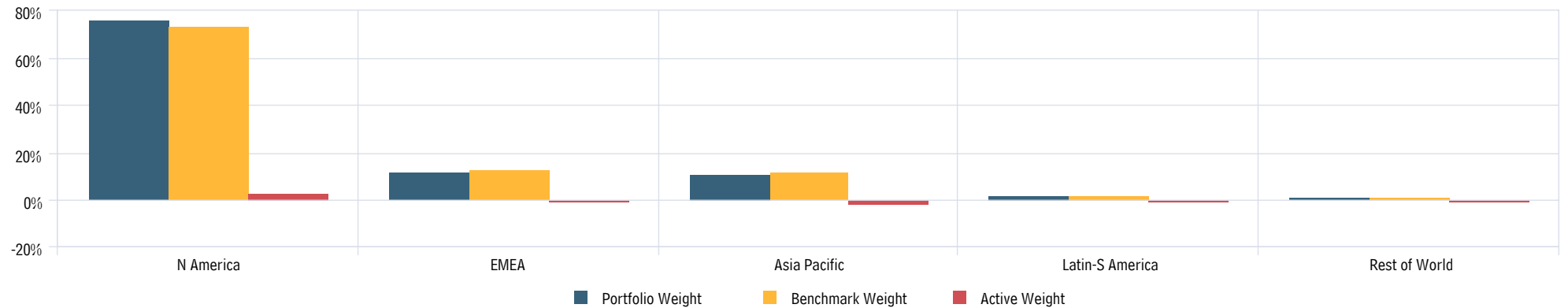
# BarraOne Total Plan Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: NYCERS - Total Plan  
 BENCHMARK: NYCERS\_POLICY  
 POSITIONS: 26,558

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 54,764,188,586  
 ACCEPTED: 26,282

## Portfolio Allocation by Region

Region	Weight (%)			Total Risk	Active Risk CR	% of Active TR	MC to Total Tracking Error
	Portfolio	Benchmark	Active				
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>0.00</b>	<b>6.39</b>	<b>0.52</b>	<b>100.00</b>	<b>0.01</b>
N America	75.77	73.07	2.70	5.31	0.41	78.55	0.03
EMEA	11.67	12.71	-1.04	12.62	0.04	7.69	-0.02
Asia Pacific	10.60	11.95	-1.35	11.52	0.05	10.00	-0.01
Latin-S America	1.49	1.70	-0.21	20.43	0.02	3.58	-0.03
Rest of World	0.48	0.57	-0.10	5.83	0.00	0.19	0.04



# BarraOne Total Plan Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: NYCERS - Total Plan  
 BENCHMARK: NYCERS\_POLICY  
 POSITIONS: 26,558

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 54,764,188,586  
 ACCEPTED: 26,282

## Top 30 Countries by Weight%

Country of Exposure	Weight (%)			Total Risk	Active Risk CR	% of Active TR	MC to Total Tracking Error
	Portfolio	Benchmark	Active				
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>0.00</b>	<b>6.39</b>	<b>0.52</b>	<b>100.00</b>	<b>0.01</b>
United States	73.77	70.79	2.98	5.21	0.43	81.88	0.03
Japan	3.21	3.88	-0.68	12.85	0.02	3.74	-0.01
United Kingdom	3.19	3.15	0.04	12.45	0.02	4.67	-0.01
S. Korea	2.12	2.09	0.03	17.70	0.00	0.07	-0.03
Taiwan	1.50	1.71	-0.21	15.31	0.00	0.82	-0.01
Switzerland	1.32	1.30	0.02	12.07	-0.00	-0.10	-0.02
Germany	1.32	1.60	-0.28	15.50	0.01	1.84	-0.03
India	1.30	1.19	0.10	19.64	-0.00	-0.30	-0.02
Canada	1.24	2.20	-0.96	10.34	0.01	1.61	-0.01
France	1.18	1.86	-0.68	13.82	0.02	4.06	-0.03
Brazil	0.95	0.88	0.07	31.35	-0.00	-0.53	-0.06
South Africa	0.85	0.86	-0.02	25.59	0.00	0.49	-0.06
Netherlands	0.70	0.77	-0.07	13.87	-0.01	-1.56	-0.01
Mexico	0.56	0.54	0.03	18.45	0.00	0.25	-0.02
Hong Kong	0.56	0.50	0.06	18.05	0.00	0.66	-0.01
Australia	0.53	1.10	-0.57	13.30	0.02	4.43	-0.03
Italy	0.47	0.44	0.03	21.62	-0.01	-1.09	-0.04
Spain	0.45	0.48	-0.02	16.18	0.01	1.04	-0.03
Sweden	0.45	0.47	-0.02	16.55	-0.00	-0.02	-0.03
Thailand	0.44	0.34	0.10	16.54	-0.00	-0.09	-0.00
Denmark	0.40	0.26	0.14	15.57	0.00	0.40	-0.01
Malaysia	0.36	0.34	0.01	15.51	-0.00	-0.06	0.01
Singapore	0.33	0.23	0.10	14.76	-0.00	-0.07	-0.01
Indonesia	0.27	0.32	-0.05	21.71	-0.00	-0.19	-0.01
Norway	0.21	0.15	0.06	19.18	-0.00	-0.68	-0.02
Luxembourg	0.20	0.21	-0.01	5.98	-0.00	-0.22	0.04
Poland	0.20	0.18	0.02	23.03	-0.00	-0.38	-0.05
Jersey	0.20	0.01	0.18	0.10	0.01	1.91	0.05
Chile	0.17	0.16	0.01	19.37	0.00	0.08	0.00
Ireland	0.17	0.17	-0.01	6.34	0.00	0.25	0.02



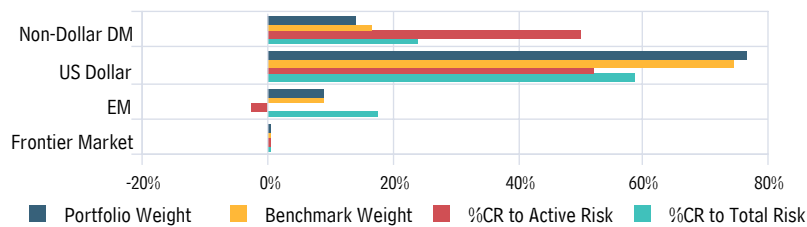
# BarraOne Total Plan Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: NYCERS - Total Plan  
 BENCHMARK: NYCERS\_POLICY  
 POSITIONS: 26,558

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 54,764,188,586  
 ACCEPTED: 26,282

## Portfolio Allocation by Currency

Exposure by Market



Developed Market Currency

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	41,939,390,895.64	77.22	58.40
Euro	2,238,692,982.71	7.30	8.23
Japanese Yen	1,736,786,236.43	4.34	3.78
British Pound Sterling	1,438,025,118.97	3.05	4.71
Swiss Franc	696,045,819.37	-0.28	2.00

Emerging Market Currency

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
Korean Won	1,133,873,692.93	0.55	3.92
New Taiwan Dollar	824,043,579.69	0.82	2.25
Indian Rupee	710,454,989.97	-0.27	2.30
Brazilian Real	497,767,693.58	-0.70	2.66
South African Rand	463,803,384.19	0.51	2.18

Top 15 Currencies by Weight%

Weight (%)

Currency of Exposure	Portfolio	Benchmark	Active	Total Risk	CR to TR	CR to TR (%)	CR to AR	CR to AR (%)
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>0.00</b>	<b>6.39</b>	<b>6.39</b>	<b>100.00</b>	<b>0.52</b>	<b>100.00</b>
US Dollar	76.58	74.19	2.39	5.12	3.73	58.40	0.41	77.22
Euro	4.09	4.94	-0.86	15.30	0.53	8.23	0.04	7.30
Japanese Yen	3.17	3.78	-0.61	12.98	0.24	3.78	0.02	4.34
British Pound Sterling	2.63	2.69	-0.07	14.90	0.30	4.71	0.02	3.05
Korean Won	2.07	2.07	-0.00	17.62	0.25	3.92	0.00	0.55
New Taiwan Dollar	1.50	1.71	-0.21	15.31	0.14	2.25	0.00	0.82
Indian Rupee	1.30	1.19	0.11	19.64	0.15	2.30	-0.00	-0.27
Swiss Franc	1.27	1.27	0.00	12.53	0.13	2.00	-0.00	-0.28
Brazilian Real	0.91	0.86	0.05	32.59	0.17	2.66	-0.00	-0.70
South African Rand	0.85	0.85	-0.00	25.61	0.14	2.18	0.00	0.51
Canadian Dollar	0.77	1.49	-0.72	14.25	0.09	1.35	0.02	3.77
Hong Kong Dollar	0.64	0.50	0.14	17.29	0.07	1.04	0.00	0.50
Australian Dollar	0.49	1.04	-0.55	14.20	0.05	0.81	0.02	4.68
Mexican Peso	0.45	0.44	0.01	22.50	0.06	0.90	-0.00	-0.00
Thai Baht	0.44	0.34	0.10	16.54	0.04	0.61	-0.00	-0.09

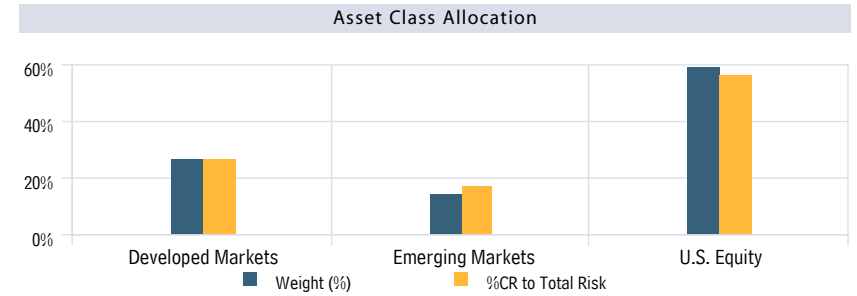
# BarraOne Equity Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: Public Equity  
 BENCHMARK: Public Equity  
 POSITIONS: 17,249  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 32,296,037,277  
 ACCEPTED: 17,075

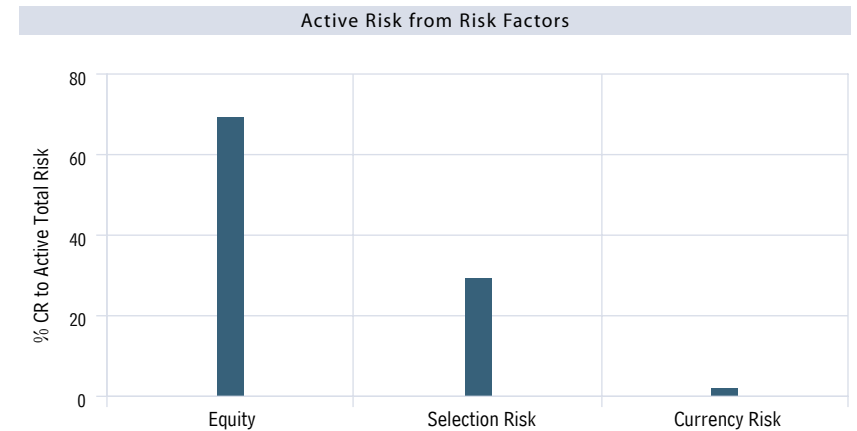
## Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	10.49	<b>Total</b>	<b>32,296,037,277</b>	<b>100.00</b>	<b>10.49</b>	<b>10.49</b>	<b>100.00</b>
Benchmark Risk	10.44	Developed Markets	8,534,951,137	26.43	11.76	2.84	27.09
Active Risk	0.45	Emerging Markets	4,760,844,402	14.74	14.69	1.78	16.93
Portfolio Beta	1.00	U.S. Equity	19,000,241,738	58.83	10.56	5.87	55.98



## Risk Factor Breakdown

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
<b>Total Risk</b>	<b>10.49</b>	<b>100.00</b>	<b>1.00</b>	<b>0.45</b>	<b>100.00</b>	<b>1.00</b>
Local Market Risk	9.53	90.81	0.98	0.44	98.28	0.97
Common Factor Risk	9.48	90.32	0.98	0.31	69.26	0.81
Equity	9.48	90.33	0.98	0.31	69.27	0.81
Style	0.18	1.74	0.51	0.17	37.59	0.63
Industry	9.30	88.59	0.98	0.14	31.67	0.56
Selection Risk	0.05	0.49	0.07	0.13	29.01	0.54
Currency Risk	0.96	9.19	0.47	0.01	1.72	0.08



# BarraOne Equity Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: Public Equity  
 BENCHMARK: Public Equity  
 POSITIONS: 17,249  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 32,296,037,277  
 ACCEPTED: 17,075

## Portfolio Allocation by Region

Region	Weight (%)			Total Risk	Active Risk CR	% of Active TR	MC to Total Tracking Error
	Portfolio	Benchmark	Active				
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>-0.00</b>	<b>10.49</b>	<b>0.45</b>	<b>100.00</b>	<b>0.00</b>
Asia Pacific	17.79	18.30	-0.51	11.62	0.13	29.08	0.01
EMEA	17.43	17.20	0.23	14.12	0.17	37.77	0.01
Latin-S America	2.15	2.39	-0.24	23.47	-0.01	-1.92	0.04
N America	62.33	61.76	0.57	10.51	0.16	35.12	0.01
Rest of World	0.30	0.35	-0.05	15.49	-0.00	-0.04	0.01





# BarraOne Equity Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: Public Equity  
 BENCHMARK: Public Equity  
 POSITIONS: 17,249  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 32,296,037,277  
 ACCEPTED: 17,075

## Top 30 Countries by Weight%

Country of Exposure	Weight (%)			Total Risk	Active Risk CR	%CR to Active TR	MC to Active TR
	Portfolio	Benchmark	Active				
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>-0.00</b>	<b>10.49</b>	<b>0.45</b>	<b>100.00</b>	<b>0.00</b>
United States	59.70	59.30	0.40	10.51	0.10	21.92	0.02
Japan	5.38	5.94	-0.56	12.98	0.06	12.60	0.00
United Kingdom	4.47	4.23	0.24	14.88	0.03	7.58	0.01
S. Korea	3.59	3.26	0.33	17.74	0.01	3.23	0.03
Taiwan	2.55	2.69	-0.14	15.31	0.01	2.38	0.02
India	2.20	1.87	0.33	19.64	0.02	4.10	0.05
Switzerland	2.16	2.00	0.16	12.53	0.02	4.09	0.01
Germany	2.11	2.28	-0.17	16.40	0.02	4.83	0.02
France	1.92	2.71	-0.79	14.22	0.01	1.36	0.01
Brazil	1.54	1.35	0.19	32.59	0.02	3.80	0.07
South Africa	1.43	1.33	0.10	25.64	0.00	0.90	0.03
Canada	1.35	2.34	-0.99	14.50	0.01	2.59	0.01
Hong Kong	0.95	0.79	0.16	18.05	0.01	2.45	0.03
Netherlands	0.91	0.81	0.11	17.28	0.02	4.17	0.02
Australia	0.84	1.64	-0.79	14.18	0.01	1.65	0.01
Mexico	0.76	0.69	0.07	22.50	0.00	0.90	0.03
Sweden	0.75	0.66	0.09	16.57	0.01	2.12	0.02
Italy	0.75	0.55	0.19	22.67	0.02	3.84	0.02
Thailand	0.74	0.54	0.20	16.54	0.01	1.53	0.04
Spain	0.68	0.71	-0.04	18.26	0.01	1.32	0.01
Denmark	0.67	0.41	0.27	15.74	0.01	2.64	0.03
Malaysia	0.60	0.53	0.07	15.51	0.00	0.46	0.03
Singapore	0.56	0.36	0.20	14.76	0.00	1.06	0.03
Indonesia	0.44	0.43	0.01	22.46	0.00	0.46	0.04
Norway	0.34	0.19	0.15	20.17	0.01	2.07	0.04
Poland	0.33	0.27	0.06	23.26	0.00	0.74	0.04
Turkey	0.26	0.13	0.13	37.12	0.01	1.68	0.07
Chile	0.26	0.24	0.02	21.18	0.00	0.13	0.04
Finland	0.22	0.26	-0.04	16.43	0.00	0.54	0.02
Philippines	0.21	0.21	-0.00	17.48	-0.00	-0.03	0.03

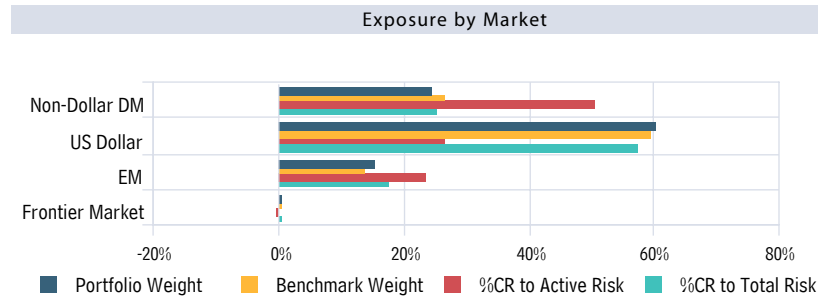


# BarraOne Equity Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: Public Equity  
 BENCHMARK: Public Equity  
 POSITIONS: 17,249  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 32,296,037,277  
 ACCEPTED: 17,075

## Portfolio Allocation by Currency



Developed Market Currency				Emerging Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)	Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	19,471,247,902.66	24.62	57.09	Korean Won	1,133,873,692.93	2.96	3.99
Euro	2,238,692,982.71	16.99	8.64	New Taiwan Dollar	824,043,514.19	2.38	2.32
Japanese Yen	1,736,786,236.43	12.60	3.91	Indian Rupee	710,454,989.97	4.10	2.30
British Pound Sterling	1,438,016,870.01	7.57	4.92	Brazilian Real	497,767,693.58	3.80	2.70
Swiss Franc	696,045,819.37	4.09	2.09	South African Rand	463,803,384.19	0.91	2.22

## Top 15 Currencies by Weight%

Currency of Exposure	Weight (%)			Total Risk	CR to TR	CR to TR (%)	CR to AR	CR to AR (%)
	Portfolio	Benchmark	Active					
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>-0.00</b>	<b>10.49</b>	<b>10.49</b>	<b>100.00</b>	<b>0.45</b>	<b>100.00</b>
US Dollar	60.29	59.44	0.85	10.49	5.99	57.09	0.11	24.62
Euro	6.93	7.77	-0.84	15.30	0.91	8.64	0.08	16.99
Japanese Yen	5.38	5.94	-0.56	12.98	0.41	3.91	0.06	12.60
British Pound Sterling	4.45	4.23	0.22	14.90	0.52	4.92	0.03	7.57
Korean Won	3.51	3.26	0.25	17.62	0.42	3.99	0.01	2.96
New Taiwan Dollar	2.55	2.69	-0.14	15.31	0.24	2.32	0.01	2.38
Indian Rupee	2.20	1.87	0.33	19.64	0.24	2.30	0.02	4.10
Swiss Franc	2.16	2.00	0.16	12.53	0.22	2.09	0.02	4.09
Brazilian Real	1.54	1.35	0.19	32.59	0.28	2.70	0.02	3.80
South African Rand	1.44	1.33	0.10	25.61	0.23	2.22	0.00	0.91
Canadian Dollar	1.31	2.34	-1.03	14.25	0.15	1.41	0.01	2.36
Hong Kong Dollar	1.09	0.79	0.30	17.29	0.11	1.08	0.02	3.67
Australian Dollar	0.83	1.64	-0.81	14.20	0.09	0.83	0.01	1.58
Mexican Peso	0.76	0.69	0.07	22.50	0.10	0.92	0.00	0.90
Thai Baht	0.74	0.54	0.20	16.54	0.06	0.61	0.01	1.53

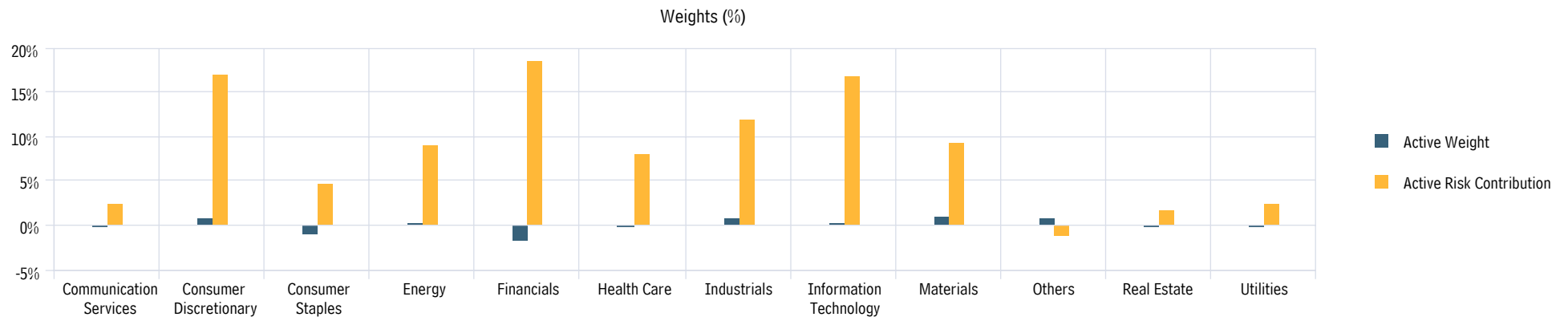
# BarraOne Equity Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: Public Equity  
 BENCHMARK: Public Equity  
 POSITIONS: 17,249  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 32,296,037,277  
 ACCEPTED: 17,075

## Portfolio Allocation by GICS Sector

GICS Sector	Weight (%)			Total Risk	Active Risk CR	%CR to Active TR	MC to Active TR
	Portfolio	Benchmark	Active				
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>-0.00</b>	<b>10.49</b>	<b>0.45</b>	<b>100.00</b>	<b>0.00</b>
Communication Services	2.60	2.65	-0.05	11.92	0.01	2.36	0.01
Consumer Discretionary	13.03	12.20	0.84	12.10	0.08	16.90	0.02
Consumer Staples	6.50	7.58	-1.09	9.04	0.02	4.65	0.01
Energy	6.32	6.28	0.04	17.32	0.04	9.10	0.03
Financials	15.61	17.23	-1.62	12.18	0.08	18.39	0.01
Health Care	11.67	11.82	-0.15	10.97	0.04	7.91	0.01
Industrials	11.54	10.72	0.82	12.00	0.05	11.81	0.02
Information Technology	20.17	20.13	0.04	13.34	0.07	16.66	0.02
Materials	6.21	5.35	0.85	14.90	0.04	9.28	0.03
Others	0.64	0.00	0.64	0.83	-0.01	-1.20	0.00
Real Estate	3.00	3.22	-0.21	10.07	0.01	1.70	0.02
Utilities	2.70	2.81	-0.11	10.35	0.01	2.44	0.01



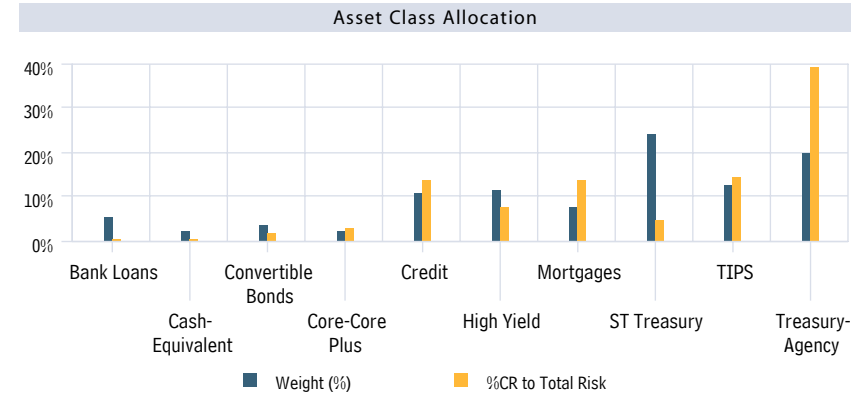
# BarraOne Fixed Income Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: Fixed Income  
 BENCHMARK: Fixed Income Policy  
 POSITIONS: 9,304  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 22,429,891,502  
 ACCEPTED: 9,202

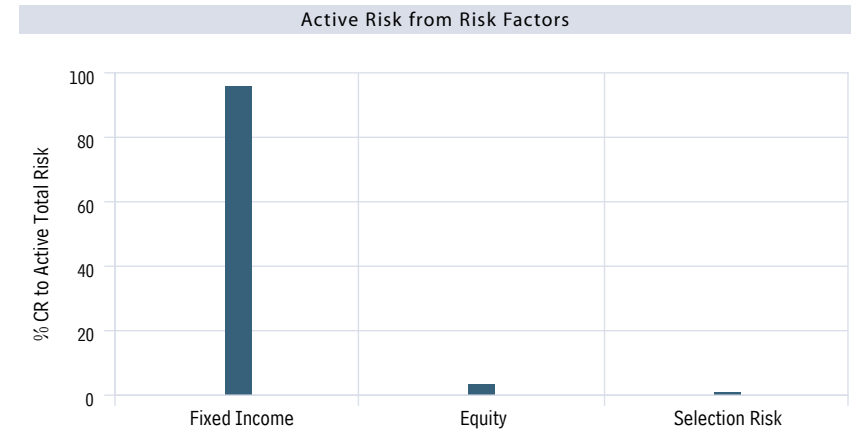
## Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	2.53	<b>Total</b>	<b>22,429,891,502</b>	<b>100.00</b>	<b>2.53</b>	<b>2.53</b>	<b>100.00</b>
Benchmark Risk	3.49	Bank Loans	1,156,079,237	5.15	2.20	0.01	0.34
Active Risk	1.02	Cash-Equivalent	479,661,321	2.14	0.09	0.00	0.02
Portfolio Beta	0.72	Convertible Bonds	753,541,141	3.36	5.99	0.04	1.59
Cont. to Eff. Duration	5.31	Core-Core Plus	518,445,977	2.31	3.53	0.08	3.13
Convexity	0.54	Credit	2,466,361,463	11.00	3.36	0.36	14.03
Yield to Worst (%)	3.13	High Yield	2,649,742,268	11.81	5.11	0.21	8.18
OAS to Swap (bp)	74.11	Mortgages	1,720,433,511	7.67	5.30	0.35	13.90
		ST Treasury	5,431,456,857	24.22	0.77	0.12	4.88
		TIPS	2,834,399,202	12.64	3.45	0.37	14.76
		Treasury-Agency	4,418,696,181	19.70	5.98	0.99	39.18



## Risk Factor Breakdown

Risk Source	Risk Decomposition			Risk Decomposition		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
<b>Total Risk</b>	<b>2.53</b>	<b>100.00</b>	<b>1.00</b>	<b>1.02</b>	<b>100.00</b>	<b>1.00</b>
Local Market Risk	2.53	100.00	1.00	1.02	100.00	1.00
Common Factor Risk	2.53	99.89	1.00	1.01	99.40	1.00
Equity	0.01	0.30	0.04	0.04	3.75	0.23
Industry	0.01	0.26	0.04	0.03	3.35	0.22
Fixed Income	2.52	99.59	1.00	0.97	95.65	0.98
Nominal Rates	1.91	75.56	0.84	0.98	96.46	0.94
Real Rates	0.38	14.83	0.86	0.10	9.56	0.81
Credit	0.23	9.20	0.21	-0.11	-10.38	-0.26
Selection Risk	0.00	0.11	0.03	0.01	0.60	0.08



# BarraOne Fixed Income Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: Fixed Income  
 BENCHMARK: Fixed Income Policy  
 POSITIONS: 9,304  
 MODEL: BIM303L

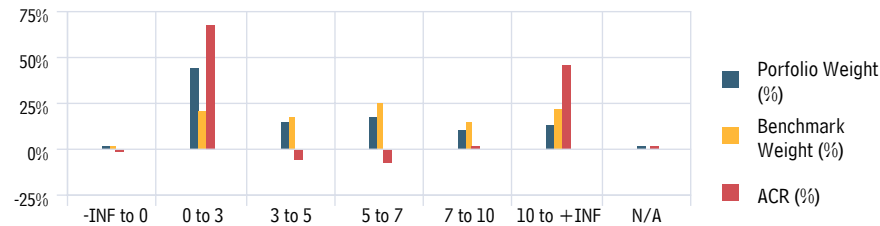
CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 22,429,891,502  
 ACCEPTED: 9,202

## Portfolio by Factor Breakdowns

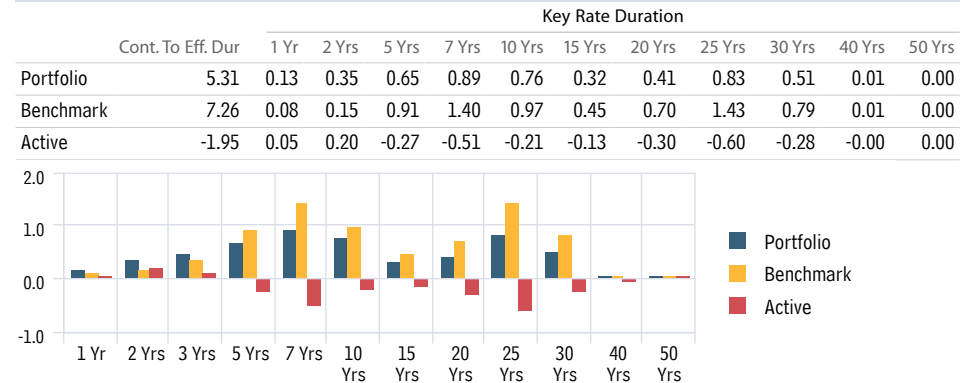
Spread Factor	Volatility	Top 10 Spread Factor				Correlation	Contribution (Residual)			
		Exposure (Residual)					Active Port	to TR	to AR	to AR%
		Portfolio	Benchmark	Active	MCAR					
US Energy CCC	8.58	0.01	0.01	0.00	0.01	0.15	0.00	0.00	0.44	
US Materials CCC	3.26	0.00	0.00	0.00	0.01	0.19	0.00	0.00	0.16	
US Financials BBB	0.49	0.13	0.08	0.04	0.00	0.07	0.01	0.00	0.14	
US Corporate Non-Financials CC	2.80	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.12	
US Conventional 30 yr Mortgage	24.04	0.00	0.00	0.00	0.13	0.54	-0.00	0.00	0.10	
US CCC	2.75	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.08	
US Consumer Staples A	0.27	0.01	0.03	-0.02	-0.00	-0.15	0.00	0.00	0.08	
US Financials Real Estate BBB	0.45	0.03	0.02	0.02	0.00	0.09	0.00	0.00	0.06	
US Health Care A	0.31	0.01	0.03	-0.01	-0.00	-0.13	0.00	0.00	0.06	
US Consumer Staples CCC	1.83	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.05	

Term Structure	Volatility	Top 10 Term Structure				Correlation	Contribution (Residual)			
		Exposure (Residual)					Active Port	to TR	to AR	to AR%
		Portfolio	Benchmark	Active	MCAR					
US Shift	0.49	4.34	6.03	-1.69	-0.00	-0.89	1.76	0.73	72.00	
US Twist	0.19	1.14	2.95	-1.81	-0.00	-0.73	0.12	0.25	24.91	
US Inflation-protected	0.48	0.96	1.24	-0.28	-0.00	-0.65	0.35	0.08	8.35	
US Inflation-protected	0.33	0.30	0.45	-0.15	-0.00	-0.26	0.01	0.01	1.24	
US Butterfly	0.13	-0.44	-0.44	0.00	0.00	0.27	0.02	0.00	0.02	
US Municipal Butterfly	0.15	-0.00	0.00	-0.00	0.00	0.17	0.00	-0.00	-0.01	
US Inflation-protected	0.15	-0.31	-0.30	-0.01	0.00	0.28	0.02	-0.00	-0.03	
US Municipal Twist	0.24	0.01	0.00	0.01	-0.00	-0.39	0.00	-0.00	-0.07	
US Implied Volatility	16.66	-0.00	-0.00	-0.00	0.06	0.34	0.01	-0.00	-0.08	
US Municipal Shift	0.46	0.01	0.00	0.01	-0.00	-0.69	0.00	-0.00	-0.30	

%CR to Active Risk by Duration Buckets



Key Rate Duration



# BarraOne Fixed Income Summary

COMPANY: NYCRS - NYCERS  
 PORTFOLIO: Fixed Income  
 BENCHMARK: Fixed Income Policy  
 POSITIONS: 9,304  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 22,429,891,502  
 ACCEPTED: 9,202

## Top 30 Countries by Weight%

Country of Exposure	Weight (%)			Total Risk	Active Risk CR	%CR to Active TR	MC to Active TR
	Portfolio	Benchmark	Active				
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>-0.00</b>	<b>2.53</b>	<b>1.02</b>	<b>100.00</b>	<b>0.01</b>
United States	94.12	90.91	3.20	2.58	1.04	102.71	-0.02
United Kingdom	1.22	1.26	-0.04	2.38	0.00	0.46	-0.01
Canada	1.09	1.95	-0.86	4.99	-0.02	-2.31	-0.01
Luxembourg	0.48	0.57	-0.09	5.98	0.00	0.05	-0.00
Jersey	0.48	0.04	0.44	0.10	0.01	1.47	-0.00
Netherlands	0.40	0.71	-0.31	4.95	-0.01	-0.59	-0.01
Mexico	0.28	0.26	0.02	5.66	0.00	0.21	-0.04
Ireland	0.27	0.26	0.01	3.42	-0.00	-0.01	-0.01
Germany	0.18	0.43	-0.24	1.76	-0.00	-0.42	-0.01
Spain	0.13	0.06	0.07	3.07	0.00	0.19	-0.02
Switzerland	0.13	0.10	0.03	2.39	0.00	0.21	-0.02
Belgium	0.12	0.16	-0.04	4.06	0.00	0.13	-0.05
Israel	0.11	0.04	0.07	4.46	0.00	0.22	-0.01
Colombia	0.11	0.07	0.04	6.45	0.00	0.07	-0.03
France	0.10	0.36	-0.25	8.96	-0.01	-0.64	-0.01
World	0.10	0.48	-0.39	4.12	-0.00	-0.17	-0.03
Brazil	0.09	0.05	0.04	5.16	0.00	0.14	-0.02
Australia	0.09	0.17	-0.08	3.90	-0.00	-0.18	-0.01
Japan	0.08	0.28	-0.20	2.44	-0.00	-0.31	-0.02
Italy	0.06	0.24	-0.18	10.60	-0.00	-0.21	-0.02
Caymans	0.05	0.10	-0.04	7.35	-0.00	-0.15	0.00
Bermuda	0.05	0.04	0.01	2.13	0.00	0.09	-0.01
New Zealand	0.04	0.03	0.01	13.40	0.00	0.04	0.00
Chile	0.04	0.02	0.01	5.05	0.00	0.02	-0.02
Norway	0.03	0.07	-0.05	3.38	-0.00	-0.06	-0.02
Indonesia	0.03	0.13	-0.10	9.28	0.00	0.00	-0.04
Panama	0.03	0.05	-0.02	7.25	-0.00	-0.04	-0.03
S. Korea	0.01	0.06	-0.04	4.23	-0.00	-0.08	-0.02
China	0.01	0.09	-0.08	2.44	-0.00	-0.01	-0.03
Denmark	0.01	0.02	-0.00	4.80	-0.00	-0.02	0.00

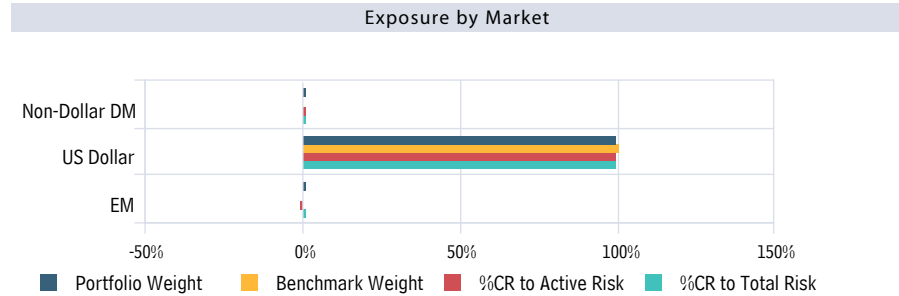


# BarraOne Fixed Income Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: Fixed Income  
 BENCHMARK: Fixed Income Policy  
 POSITIONS: 9,304  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 22,429,891,502  
 ACCEPTED: 9,202

## Portfolio Allocation by Currency



Developed Market Currency				Emerging Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)	Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	22,429,883,185.20	100.00	100.00	New Taiwan Dollar	65.50	0.00	0.00
British Pound Sterling	8,248.96	0.00	0.00				
Australian Dollar	2.16	0.00	0.00				

## Top 15 Currencies by Weight%

Currency of Exposure	Weight (%)		Active	Total Risk	CR to TR	CR to TR (%)	CR to AR	CR to AR (%)
	Portfolio	Benchmark						
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>-0.00</b>	<b>2.53</b>	<b>2.53</b>	<b>100.00</b>	<b>1.02</b>	<b>100.00</b>
US Dollar	100.00	100.00	-0.00	2.53	2.53	100.00	1.02	100.00
British Pound Sterling	0.00	0.00	0.00	8.83	0.00	0.00	0.00	0.00
New Taiwan Dollar	0.00	0.00	0.00	4.01	0.00	0.00	0.00	0.00
Australian Dollar	0.00	0.00	0.00	8.38	0.00	0.00	0.00	0.00

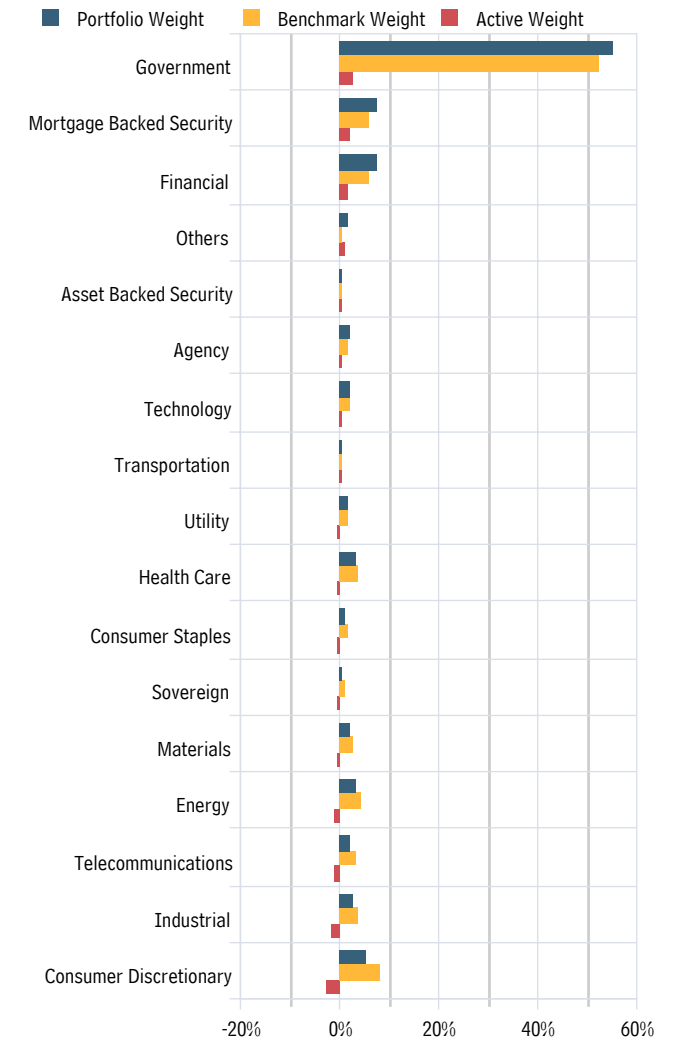
# BarraOne Fixed Income Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: Fixed Income  
 BENCHMARK: Fixed Income Policy  
 POSITIONS: 9,304  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 22,429,891,502  
 ACCEPTED: 9,202

## Portfolio Allocation by Bond Sector

Sector	Weight (%)			Cont. To Eff. Dur	Total Risk	Active Risk CR	%CR to Active TR	MC to Active TR
	Portfolio	Benchmark	Active					
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>-0.00</b>	<b>5.31</b>	<b>2.53</b>	<b>1.02</b>	<b>100.00</b>	<b>0.01</b>
Government	55.20	52.45	2.75	3.44	2.91	1.06	104.04	-0.03
Financial	7.83	5.96	1.87	0.25	2.29	0.07	6.52	-0.01
Mortgage Backed Security	7.69	5.77	1.92	0.41	5.61	-0.03	-2.68	-0.05
Consumer Discretionary	5.53	8.16	-2.63	0.18	3.48	-0.06	-6.32	-0.01
Health Care	3.27	3.71	-0.44	0.13	3.27	0.00	0.41	-0.01
Energy	3.21	4.15	-0.94	0.16	9.43	-0.02	-2.03	-0.01
Industrial	2.51	3.93	-1.42	0.07	3.04	-0.04	-3.44	-0.01
Materials	2.17	2.96	-0.78	0.08	5.07	-0.02	-1.62	-0.01
Technology	2.11	2.02	0.09	0.08	4.63	0.03	3.23	-0.01
Telecommunications	2.05	3.28	-1.23	0.09	5.54	-0.03	-2.75	-0.01
Agency	1.99	1.68	0.31	0.15	4.46	-0.01	-1.24	-0.03
Utility	1.62	1.69	-0.08	0.09	3.08	0.00	0.18	-0.03
Others	1.37	0.03	1.34	0.01	0.22	0.04	4.34	-0.00
Consumer Staples	1.14	1.74	-0.60	0.06	3.00	-0.00	-0.44	-0.02
Transportation	0.78	0.72	0.06	0.04	2.69	-0.00	-0.05	-0.02
Asset Backed Security	0.52	0.05	0.48	0.02	2.25	0.01	1.13	-0.01
Commercial Mortgage Backed	0.46	0.00	0.46	0.02	2.37	0.01	1.03	-0.01
Sovereign	0.35	1.07	-0.72	0.02	5.51	0.00	0.20	-0.03
Local/Provincial	0.11	0.15	-0.03	0.01	5.03	-0.00	-0.31	-0.02
Supranational	0.10	0.48	-0.39	0.01	4.12	-0.00	-0.17	-0.03
Covered bond	0.00	0.00	0.00	0.00	0.87	0.00	0.00	-0.01
Corporation	0.00	0.01	-0.01	0.00	0.00	-0.00	-0.03	-0.00





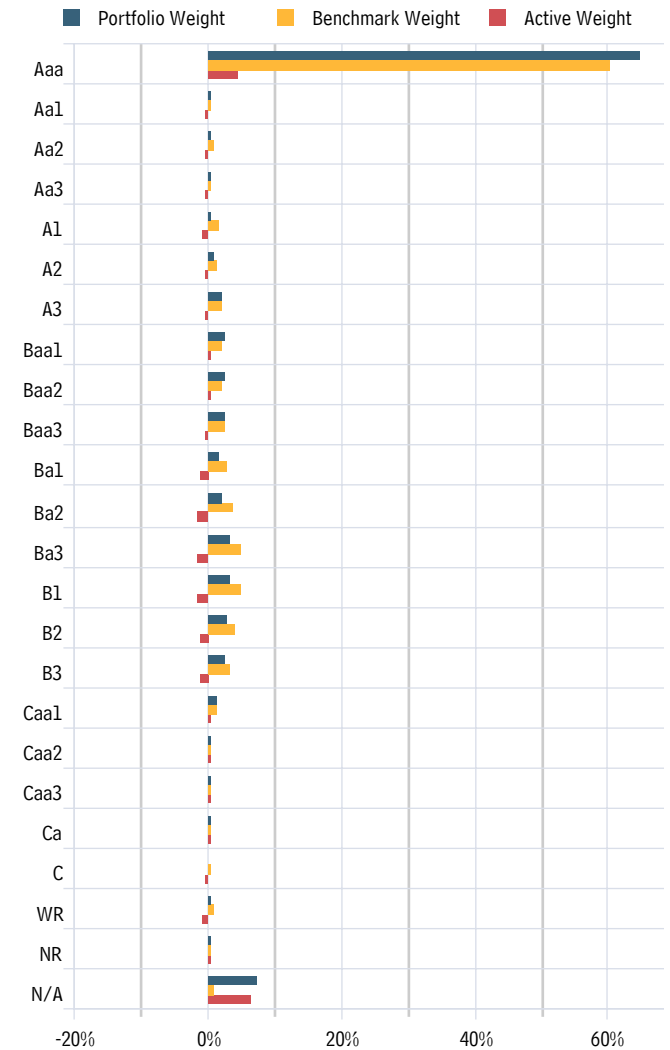
# BarraOne Fixed Income Summary

COMPANY: NYCERS - NYCERS  
 PORTFOLIO: Fixed Income  
 BENCHMARK: Fixed Income Policy  
 POSITIONS: 9,304  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 22,429,891,502  
 ACCEPTED: 9,202

## Portfolio Allocation by Moody's Rating

Rating	Weight (%)			Cont. To Eff. Dur	Spread Duration	Total Risk	Active Risk CR	%CR to Active TR
	Portfolio	Benchmark	Active					
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>-0.00</b>	<b>5.31</b>	<b>5.44</b>	<b>2.53</b>	<b>1.02</b>	<b>100.00</b>
Aaa	64.77	60.25	4.53	4.01	6.25	3.23	1.02	100.09
Aa1	0.19	0.27	-0.08	0.02	8.37	5.17	-0.00	-0.28
Aa2	0.19	0.68	-0.49	0.02	8.52	4.25	-0.01	-0.61
Aa3	0.21	0.52	-0.31	0.02	7.49	3.70	-0.00	-0.32
A1	0.49	1.42	-0.93	0.03	5.88	2.86	0.00	0.09
A2	0.88	1.14	-0.26	0.05	5.36	3.48	0.01	1.29
A3	1.87	2.06	-0.18	0.13	6.96	3.53	0.01	0.77
Baa1	2.39	2.09	0.30	0.17	7.45	3.75	0.01	0.96
Baa2	2.39	2.02	0.36	0.16	6.96	3.69	0.01	0.57
Baa3	2.40	2.53	-0.13	0.13	5.41	2.97	0.01	0.62
Ba1	1.50	2.86	-1.36	0.07	5.01	4.19	-0.03	-3.30
Ba2	1.89	3.56	-1.68	0.06	3.55	3.30	-0.04	-4.04
Ba3	3.12	4.80	-1.68	0.09	3.32	3.50	-0.04	-4.20
B1	3.17	4.75	-1.59	0.08	2.99	4.09	-0.05	-4.84
B2	2.81	4.14	-1.33	0.06	2.72	4.70	-0.04	-4.40
B3	2.33	3.37	-1.04	0.07	3.31	5.83	-0.03	-3.28
Caa1	1.22	1.22	0.00	0.04	3.09	9.95	0.01	0.58
Caa2	0.47	0.36	0.11	0.01	3.30	10.45	0.00	0.14
Caa3	0.06	0.06	0.00	0.00	2.67	14.68	0.00	0.06
Ca	0.02	0.00	0.01	0.00	2.54	13.41	0.00	0.05
C	0.00	0.00	-0.00	0.00	0.00	0.00	-0.00	-0.00
WR	0.16	0.87	-0.71	0.00	1.91	1.85	-0.02	-2.28
NR	0.07	0.04	0.03	0.00	1.64	0.73	0.00	0.21
Not Rated	7.40	0.98	6.42	0.10	1.51	2.01	0.23	22.15



# BarraOne Total Plan Summary

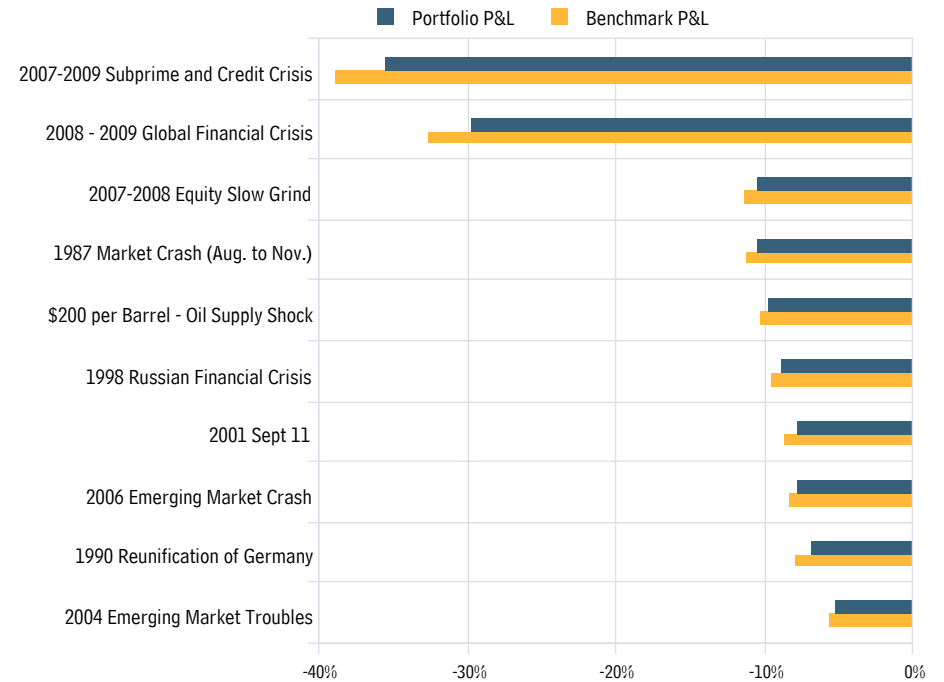
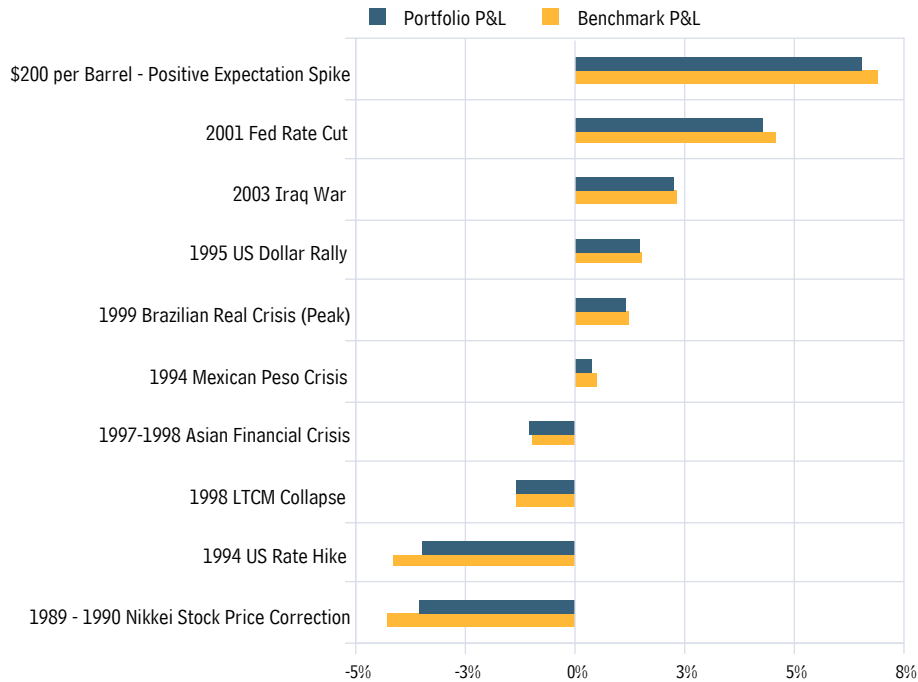
COMPANY: NYCRS - NYCERS  
 PORTFOLIO: NYCERS - Total Plan  
 BENCHMARK: NYCERS\_POLICY  
 POSITIONS: 26,558  
 MODEL: BIM303L

CURRENCY: USD  
 ANALYSIS DATE: September 30, 2018  
 MARKET VALUE: 54,764,188,586  
 ACCEPTED: 26,282

## Stress Scenarios

Top 10 Best Scenarios			
Scenario	Portfolio P&L	Benchmark P&L	Market Change (\$)
\$200 per Barrel - Positive Expectation S	6.52	6.89	3,569,254,482
2001 Fed Rate Cut	4.30	4.55	2,353,152,721
2003 Iraq War	2.26	2.35	1,237,386,996
1995 US Dollar Rally	1.44	1.55	787,429,586
1999 Brazilian Real Crisis (Peak)	1.14	1.19	626,808,559
1994 Mexican Peso Crisis	0.36	0.47	195,153,678
1997-1998 Asian Financial Crisis	-1.03	-0.95	-562,184,052
1998 LTCM Collapse	-1.37	-1.34	-750,794,029
1994 US Rate Hike	-3.48	-4.14	-1,905,848,494
1989 - 1990 Nikkei Stock Price Correctio	-3.54	-4.27	-1,938,713,204

Top 10 Worst Scenarios			
Scenario	Portfolio P&L	Benchmark P&L	Market Change (\$)
2007-2009 Subprime and Credit Crisis	-35.55	-38.90	-19,470,338,021
2008 - 2009 Global Financial Crisis	-29.74	-32.57	-16,288,902,038
2007-2008 Equity Slow Grind	-10.45	-11.27	-5,721,842,055
1987 Market Crash (Aug. to Nov.)	-10.37	-11.25	-5,676,645,622
\$200 per Barrel - Oil Supply Shock	-9.65	-10.29	-5,284,260,287
1998 Russian Financial Crisis	-8.84	-9.51	-4,841,410,075
2001 Sept 11	-7.79	-8.57	-4,265,095,381
2006 Emerging Market Crash	-7.71	-8.31	-4,220,647,979
1990 Reunification of Germany	-6.90	-7.87	-3,777,253,314
2004 Emerging Market Troubles	-5.15	-5.66	-2,818,946,563



## DISCLOSURES

The information contained in this risk report is confidential, may not be distributed to unauthorized persons, and may contain material non-public information pertaining to certain investment activities and portfolio companies. Federal, state, and/or foreign securities laws prohibit any person who has received such information from purchasing or selling such securities based on material non-public information or from communicating such information to any other person under circumstances in which it is reasonably foreseeable that such person is likely to purchase or sell such securities. Statements and risk metrics are current as of the date of this memorandum only. Past performance does not guarantee the future performance of any manager or strategy. The performance results and historical information provided herein may have been adversely or favorably impacted by events and economic conditions that will not prevail in the future. Therefore, these results are not indicative of the future performance of any strategy, index, fund, manager or group of managers.

**APPENDICES:**

**Basket Clause:**

	Adjusted Fund Policy			Fund Actual (PE & RE on an invested basis)		
	Non Basket*	Basket*	Total	Non Basket*	Basket*	Total
<b>Equity</b>						
Domestic Equity	31.3%	0.0%	31.3%	28.6%	0.1%	28.7%
Non-U.S. Equity	11.9%	8.4%	20.3%	11.9%	8.6%	20.5%
Private Equity	0.0%	7.0%	7.0%	0.9%	6.1%	6.9%
Real Estate - Core	3.3%	0.0%	3.3%	3.3%	0.0%	3.3%
Real Estate - Opportunistic	1.9%	0.0%	1.9%	1.9%	0.0%	1.9%
Private Infrastructure	0.7%	0.0%	0.7%	0.7%	0.0%	0.7%
Hedge Funds	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
<b>Total Equity</b>	<b>49.1%</b>	<b>15.4%</b>	<b>64.5%</b>	<b>47.3%</b>	<b>14.8%</b>	<b>62.1%</b>
<b>Fixed Income</b>						
U.S. Treasuries – All Maturities	0.0%	0.0%	0.0%	14.9%	0.0%	14.9%
U.S. Treasuries - Longer Than Twenty Years	10.7%	0.0%	10.7%	0.0%	0.0%	0.0%
Core Mortgage-Backed Securities	2.8%	0.0%	2.8%	2.5%	0.1%	2.6%
Credit - Investment Grade Corporates	4.8%	0.0%	4.8%	3.7%	0.0%	3.7%
High Yield	5.3%	0.8%	6.1%	3.4%	0.6%	4.0%
Bank Loans	0.0%	2.0%	2.0%	0.3%	1.5%	1.8%
TIPS	4.3%	0.0%	4.3%	4.3%	0.0%	4.3%
Convertibles	0.0%	0.0%	0.0%	1.1%	0.0%	1.1%
Opportunistic Fixed Income	0.0%	2.8%	2.8%	0.4%	2.4%	2.8%
Economically Targeted Investments	2.0%	0.0%	2.0%	1.2%	0.0%	1.2%
Other Fixed Income	0.0%	0.0%	0.0%	1.5%	0.0%	1.5%
<b>Total Fixed Income</b>	<b>29.9%</b>	<b>5.6%</b>	<b>35.5%</b>	<b>33.3%</b>	<b>4.6%</b>	<b>37.9%</b>
<b>Total Fund</b>	<b>79.0%</b>	<b>21.0%</b>	<b>100.0%</b>	<b>80.6%</b>	<b>19.4%</b>	<b>100.0%</b>
<b>Remaining Capacity</b>		4.0%			5.6%	

\*Basket amounts are estimates



Liquidity Analysis:

AUM as of September 30, 2018

	Current MV	Liquid Assets		
		Today	1 Year	2 Years
<b>PUBLIC EQUITY</b>	<b>\$32,633</b>	<b>\$32,633</b>	<b>\$32,633</b>	<b>\$32,633</b>
U.S.	19,015	19,015	19,015	19,015
EAFE Equity	8,180	8,180	8,180	8,180
Emerging Markets	5,181	5,181	5,181	5,181
Global Equity	256	256	256	256
<b>PUBLIC FIXED INCOME</b>	<b>\$23,243</b>	<b>\$22,590</b>	<b>\$22,893</b>	<b>\$22,893</b>
Short Term Securities	480	480	480	480
U.S. Government	9,853	9,853	9,853	9,853
Mortgages				
Core Mortgages	1,706	1,706	1,706	1,706
ETI	810	157	460	460
Credit - Investment Grade	3,741	3,741	3,741	3,741
Corporate - High Yield	2,658	2,658	2,658	2,658
Corporate - Bank Loans	1,162	1,162	1,162	1,162
UST - Inflation Protected	2,834	2,834	2,834	2,834
<b>ALTERNATIVE ASSETS</b>	<b>\$10,401</b>	<b>\$1,390</b>	<b>\$1,860</b>	<b>\$1,891</b>
Private Equity	4,605	0	0	0
Private Real Estate	3,440	0	0	0
Infrastructure	464	0	0	0
Opportunistic Fixed Income	1,853	1,390	1,853	1,853
Hedge Funds	38	0	7	38
<b>Total Assets</b>	<b>\$66,277</b>	<b>\$56,613</b>	<b>\$57,386</b>	<b>\$57,418</b>
<b>Total Illiquid \$</b>		\$9,664	\$8,890	\$8,859
<b>Total Illiquid %</b>		14.6%	13.4%	13.4%
Unfunded OFI Commitments	\$209			
Unfunded INF Commitments	\$606			
Unfunded PE Commitments	\$3,022			
Unfunded RE Commitments	1,537			
<b>Total commitments \$</b>	<b>\$5,374</b>			
<b>Total commitments %</b>	<b>8.1%</b>			



AUM as of September 30, 2018

**Denominator Effect - Decrease AUM by One-Third**

<b>Total Illiquid \$</b>	\$9,664	\$8,890	\$8,859
<b>Total Illiquid %</b>	21.9%	20.1%	20.0%

Note: Assumes zero realizations, no new commitments and a five-year investment period; funded out of liquids

	Current MV	Liquid Assets		
		Today	1 Year	2 Years
<b>Total Assets</b>	<b>\$66,277</b>	<b>\$56,613</b>	<b>\$57,386</b>	<b>\$57,418</b>

**Private Equity, Real Estate, Infrastructure and Opportunistic Fixed Income Stress Case**

Unfunded OFI Commitments		\$42	\$84
Unfunded INF Commitments		\$121	\$243
Unfunded PE Commitments Drawn		\$604	\$1,209
Unfunded RE Commitments Drawn		307	615
<b>Total commitments \$</b>		<b>\$1,075</b>	<b>\$2,150</b>
<b>Total commitments %</b>		1.6%	3.2%
<b>Total Illiquid \$</b>		\$9,965	\$11,009
<b>Total Illiquid %</b>		15.0%	16.6%

Note: Assumes zero realizations, no new commitments and a five-year investment period; funded out of liquids

See Assumptions Page for Full Details

**Denominator Effect - Decrease AUM by One-Third**

<b>Total Illiquid \$</b>	\$9,664	\$9,965	\$11,009
<b>Total Illiquid %</b>	21.9%	22.6%	24.9%

Note: Assumes zero realizations, no new commitments and a five-year investment period; funded out of liquids