







Common Investment Meeting (TRS)


TRS

Schedule	Wednesday, September 16, 2020 9:30 AM — 3:00 PM EDT
Venue	Virtual Meeting
Organizer	Kim Boston


Agenda


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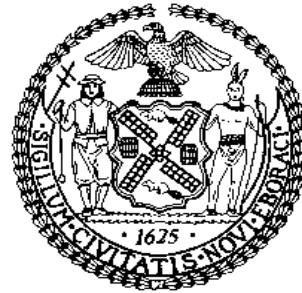
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PUBLIC SESSION:

Quarterly Fund Performance Review:



COMMON INVESTMENT MEETING – PUBLIC SESSION



THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER

September 16, 2020

MARKET UPDATE

2nd Quarter 2020



Market Returns: Q2-2020

Asset Class	Index	Q2-2020	1 Year	3 Year	5 Year	Expected*
Equities - U.S.	Russell 3000	22.03%	6.53%	10.04%	10.03%	5.80%
Equities - Developed Intl	MSCI World ex USA IMI Net	16.21%	-5.11%	0.80%	2.22%	6.80%
Equities - Emerging Intl	MSCI EMERGING MARKETS	18.08%	-3.39%	1.90%	2.86%	8.30%
Debt - US Govt Long Duration	FTSE Treasury 10+	0.51%	25.45%	12.06%	9.30%	2.65%
Debt - US Government	NYC Treas/Agency +5	0.74%	17.08%	8.58%	6.46%	2.60%
Debt - Investment Grade	NYC IG Credit	8.28%	9.26%	6.11%	5.48%	3.60%
Debt - High Yield	FTSE BB & B	9.31%	-0.39%	3.29%	4.37%	4.80%

*Average of consultant long-term arithmetic expected market returns, as of 2019

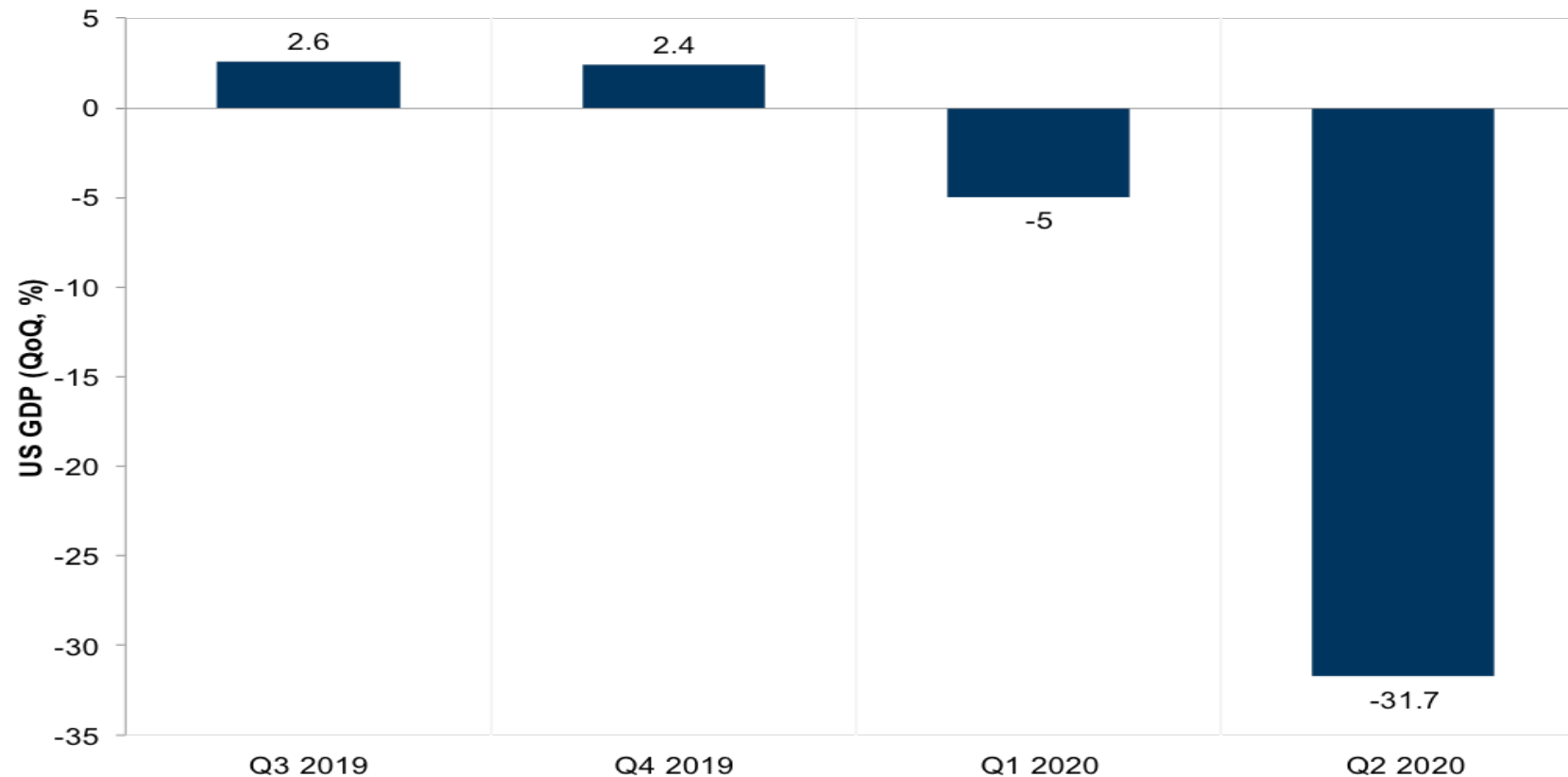
Source: State Street



Market Returns: Q2-2020

- Historic Economic Collapse vs. Massive Policy Response
- Economic collapse – Q2 GDP contracted at 31.7% (annualized) with decreases in employment

US GDP

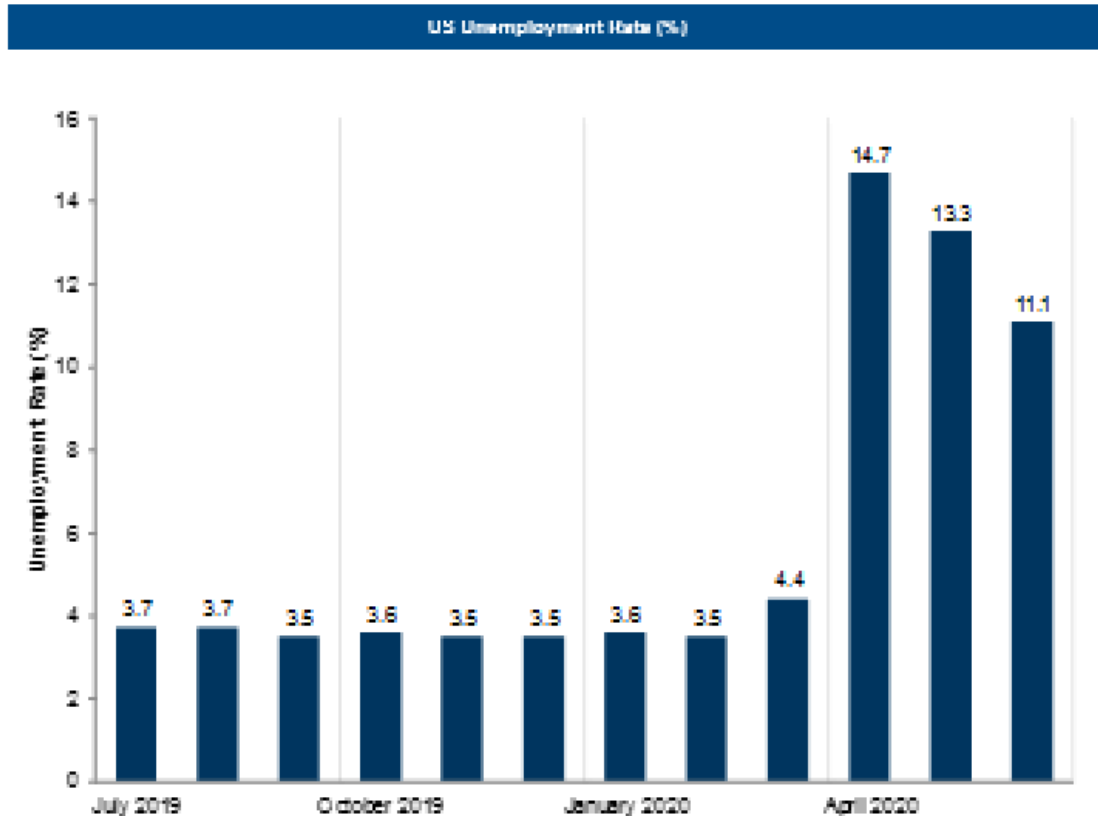


Source GSAM



Employment Trends

Monthly Employment



Month	Job Gains/Losses
January	214,000
February	251,000
March	(1,373,000)
April	(20,787,000)
May	2,725,000
June	4,791,000

Source: U.S. Bureau of Labor Statistics



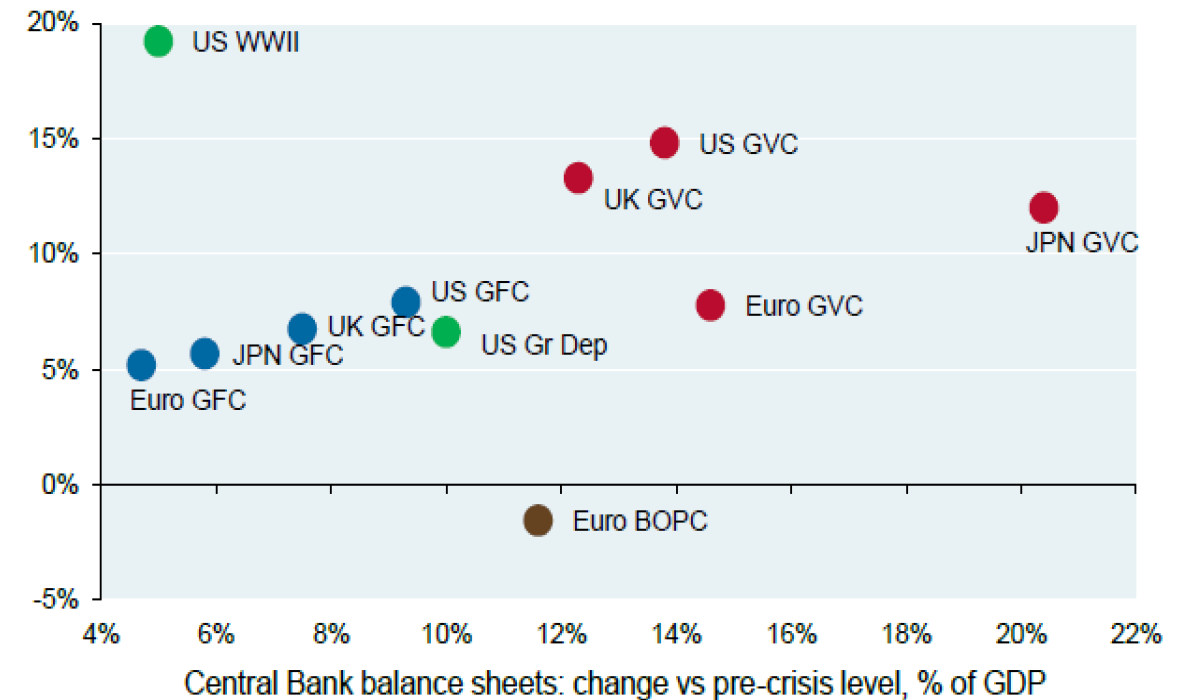
Market Returns: Q2-2020

Policy Response

- Monetary Policy Response – policy rate reduced from 1.75% - 2% to 0% to .25%, unlimited QE for US Treasuries and MBS (totaling \$1.8T of UST and \$1T of MBS from 3/20 through 8/20), multiple liquidity programs implemented supporting credit and municipal markets.
- Fiscal Policy – four fiscal programs passed, totaling \$3.3T

Quantitative Easing and Fiscal Policy Expansion

Government fiscal deficits: change vs pre-crisis level, % of GDP



Source: Central bank sources, OMB, St Louis Fed, JP Morgan Global Economic Research, JPMAM. 2020. GVC: 2020 Global Virus Crisis, GFC: 2008/2009 Global Financial Crisis, BOPC: 2012 Balance of Payments Crisis, GrDep: 1930's Great Depression (through 1937). Euro = Eurozone area.



Global Macro Issues

- COVID-19, containment and potential second wave; vaccine development ("Covid-19 is most critical driver of the path of the economy " --Jay Powell)
- Pace of economic recovery
- Federal Reserve Policy and US Interest Rates
- US – China relations
- US Equity market valuations
- US Presidential & Congressional Elections, Nov 3, 2020



Global Macro Issues

Federal Reserve Policy and US Interest Rates

Monetary Policy Framework Review (announced at Jackson Hole Conference on August 27th)

- Inflation – goal of policy is “to achieve inflation that averages 2% over time” (AIT)
- Employment – set policy according to “assessments of the shortfalls of employment from the maximum level”
- Takeaways – Fed is going to maintain extraordinarily accommodative policy for a long time, with goal of increasing inflation while the federal deficit is largest since WWII.

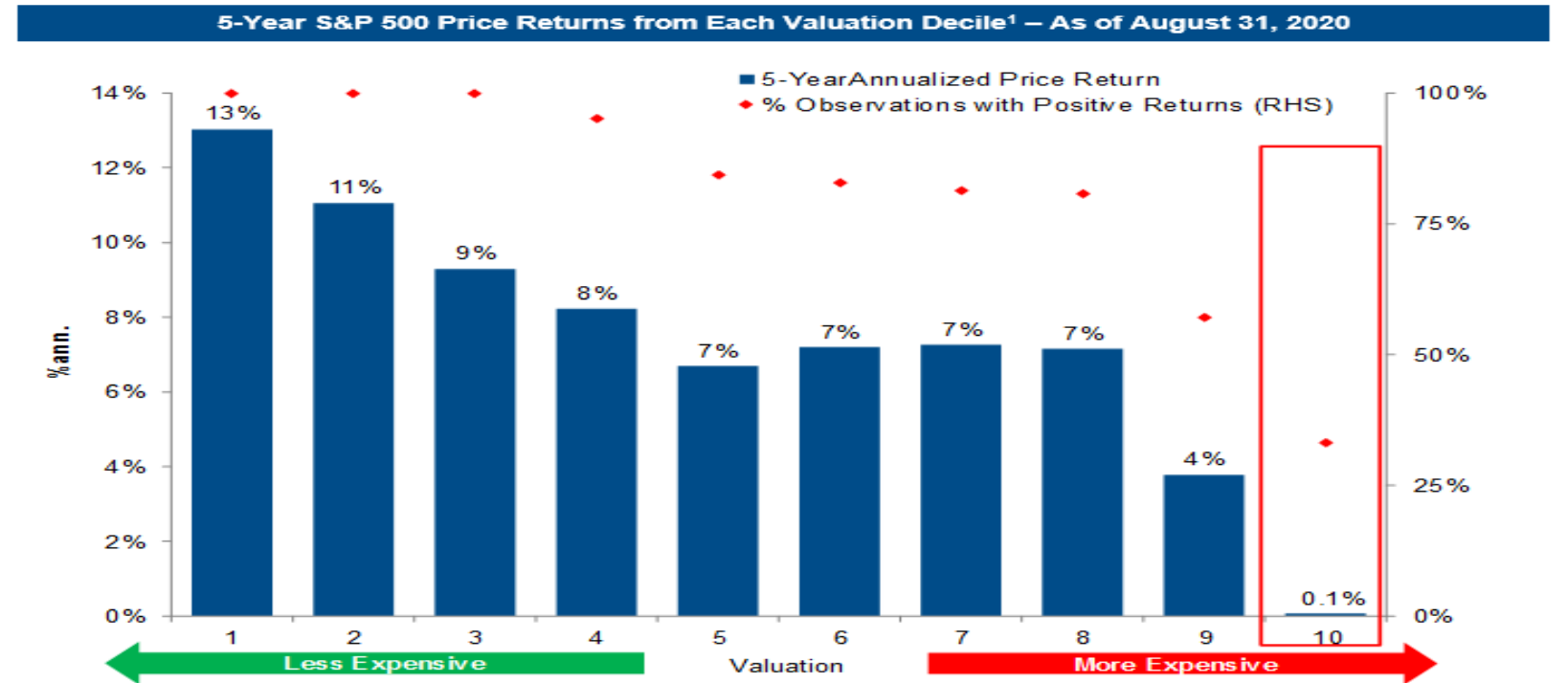


Global Macro Issues

- **US Equity Market** – Valuations are historically expensive, mega cap tech and social media stocks continue to outperform, but these mega caps stocks are highly profitable

The S&P 500 is currently in its 10th decile.

This valuation decile has preceded positive price returns over the subsequent five years 33% of the time since 1945, with an average return of 0.1%.



(1) Based on five valuation metrics for the S&P 500, beginning in September 1945: price-to-trend earnings, price-to-peak earnings, price-to-trailing 12m earnings, Shiller cyclically adjusted price-to-earnings ratio (CAPE) and price-to-10-year average earnings. These metrics are ranked from least expensive to most expensive and divided into 10 buckets based on monthly observations ("deciles"). The subsequent realized, annualized five-year price return is then calculated for each observation and averaged within each decile. Past performance is not indicative of future results.

Source: Goldman Sachs Investment Strategy Group, Bloomberg, Datastream, Robert Shiller.



Global Macro Issues

- US Equity Market – valuations and profitability**

S&P 500 price/earnings

Price / forward 2 year earnings per share



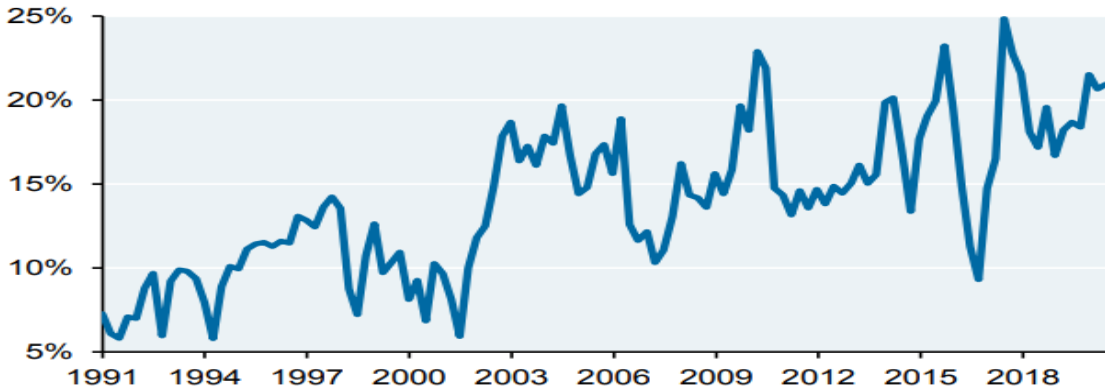
Source: Bloomberg, J.P. Morgan. September 04, 2020.

Contribution of top firms to overall US market cap



Source: Bloomberg. September 4, 2020.

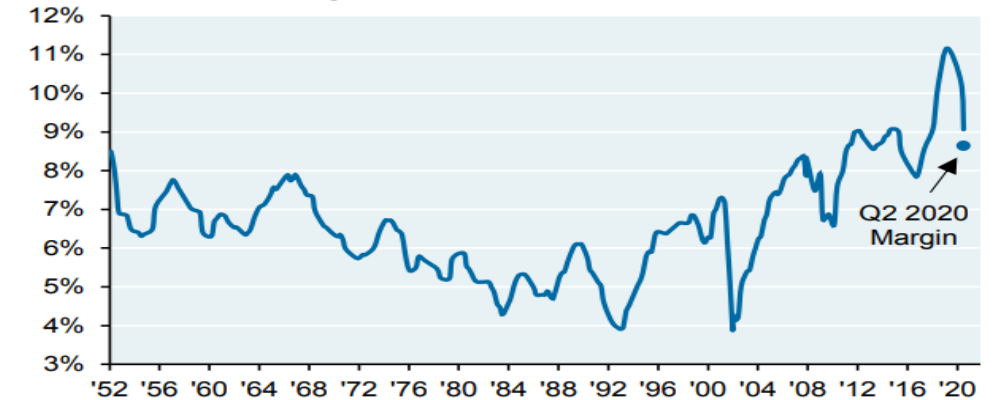
Median free cash flow margin for 10 largest stocks within S&P 500 by market cap, Trailing 12 month free cash flow margin



Source: Factset. Q2 2020.

S&P 500 ex-financials and REITs net profit margins

%, 3 month smoothing



Source: Empirical Research Partners. August 2020.

Global Macro Issues

US Presidential and Congressional Elections

- Possible policy differences amongst Biden vs. Trump vs. divided government
- Election outcome possible source of high uncertainty and market volatility



Global Macro Issues

POLICY DIFFERENCES AMONGST BIDEN VS. TRUMP VS. DIVIDED GOVERNMENT

Trump Victory

- Similar agenda, but with large infrastructure program

Biden victory

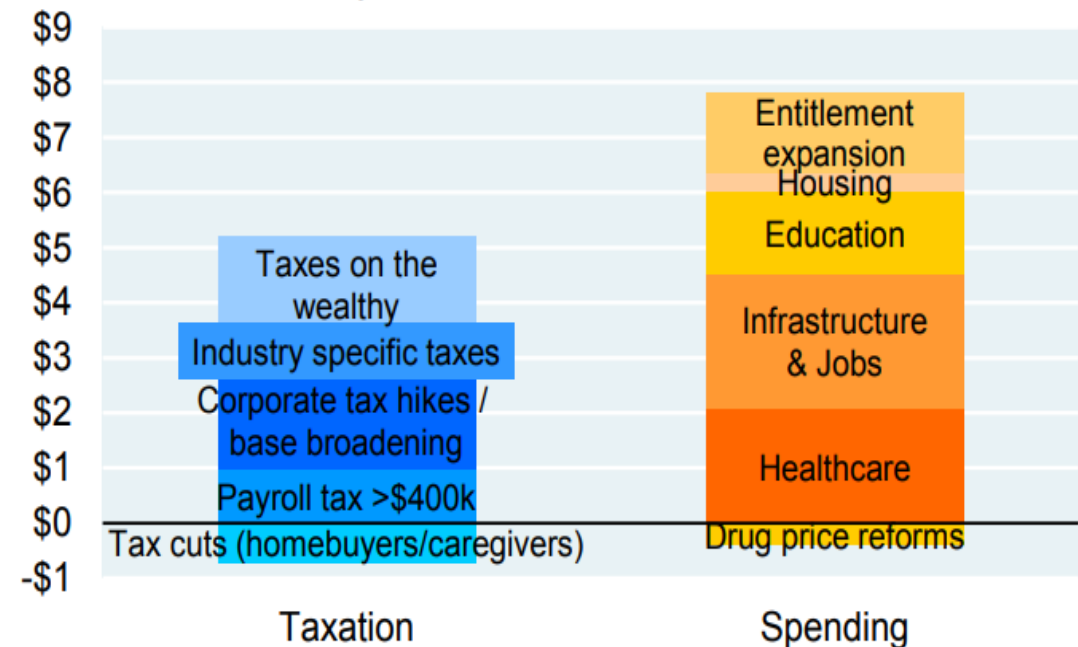
- Democrats hold house and win majority in Senate
- Tax policy: Raise \$4T-\$5T in revenue over 10-years, both increases in corporate and individual taxes
- Spending policy: Massive expenditures on Environment (clean energy), Healthcare (create Medicare option, expand Obamacare), Labor Relations (policies that favor labor over capital)

Congressional elections

- Senate – currently 53-47 in favor of Republicans, but 23 Republican and 12 Democratic seats up for reelection
- Divided government – markets usually benefit from divided government

The Biden Agenda

\$, trillions over 10 years



Source: Cornerstone, JPMAM. 2020.



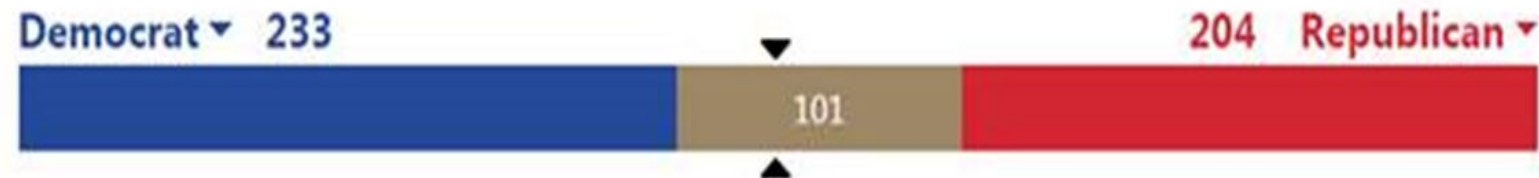
Global Macro Issues

Election outcome possible source of high uncertainty and market volatility

Schedule:

Presidential Debate	Sept. 29
VP Debate	Oct. 7
Presidential Debate	Oct. 15
Presidential Debate	Oct. 22
Election	Nov. 3

Electoral College Votes



Key Battleground states (101 electoral college votes)

Florida

• 29 votes

Arizona

• 11 votes

Michigan

• 16 votes

N. Carolina

• 15 votes

Pennsylvania

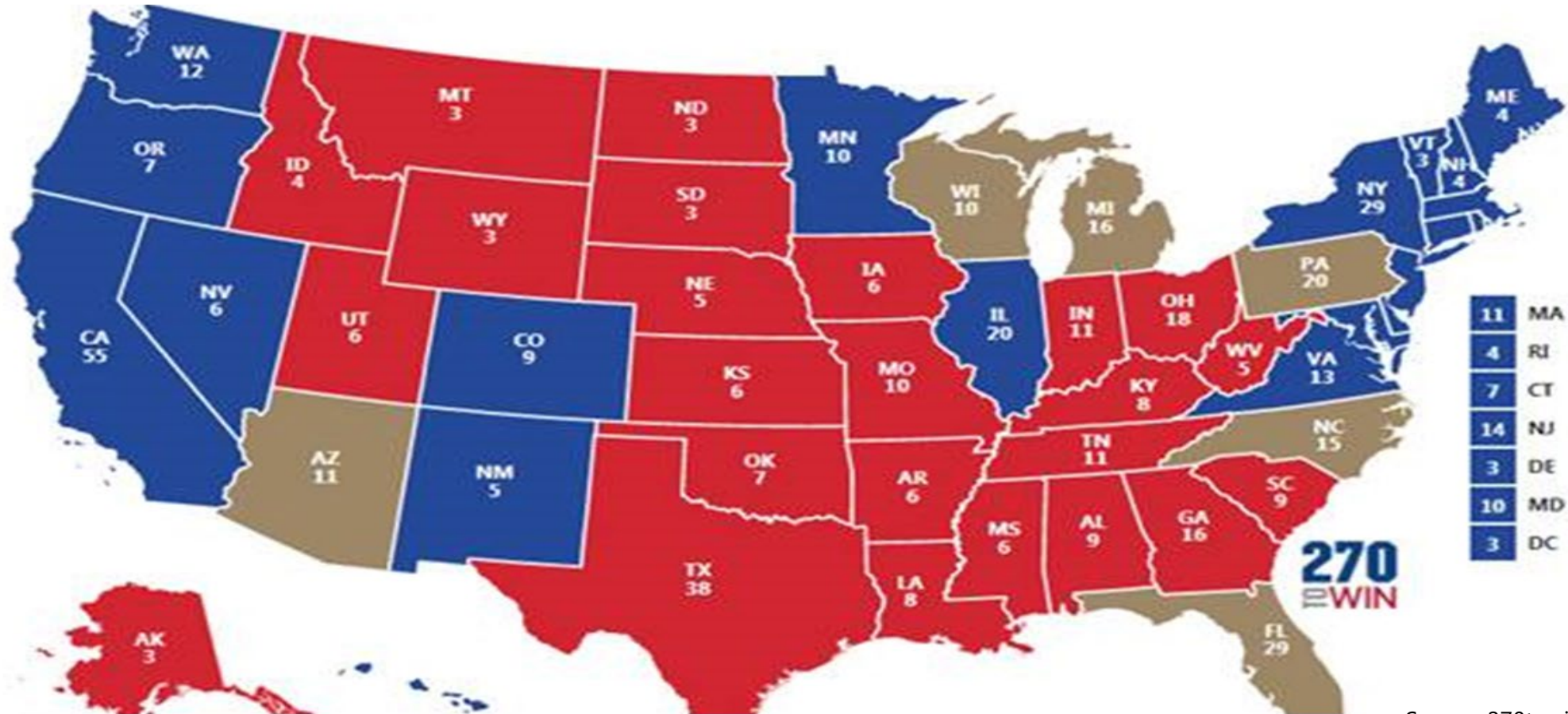
• 20 votes

Wisconsin

• 10 votes



Global Macro Issues



Source: 270twin.com

Global Macro Issues

If Biden Wins Florida

Safe Democratic electoral votes	187
States HRC won (CO, ME, MN, NH, NV, VA)	46
Subtotal safe Dem states + HRC	233
Assume Biden wins Florida	29
Total safe + HRC states + Florida	262
Net needed after Florida win	8
States Biden needs to win to get to 270	1 of 5: AZ, MI, NC, PA, WI

If Trump Wins Florida

Safe Republican electoral votes	180
States Trump is Polling Ahead (IA, OH)	24
Subtotal safe Rep states + States Trump polling ahead	204
Assume Trump wins Florida	29
Total safe + Trump polling ahead + Florida	233
Net needed after Florida win	37
States Trump needs to win to get to 270	3 of 5: AZ, MI, NC, PA, WI

If Biden Does Not Win Florida

Safe Democratic electoral votes	187
States HRC won (CO, ME, MN, NH, NV, VA)	46
Subtotal safe Dem states + HRC	233
Assume Biden wins Florida	0
Total safe + HRC states + Florida	233
Net needed after Florida win	37
States Biden needs to win to get to 270	3 of 5: AZ, MI, NC, PA, WI

If Trump Does Not Win Florida

Safe Republican electoral votes	180
States Trump is Polling Ahead (IA, OH)	24
Subtotal safe Rep states + States Trump polling ahead	204
Assume Trump wins Florida	0
Total safe + Trump polling ahead + Florida	204
Net needed after Florida win	66
States Trump needs to win to get to 270	5 of 5: AZ, MI, NC, PA, WI



Global Macro Issues

COMPLEX SCHEDULE:

Election

- Nov. 3

Safe Harbor period

- Nov. 3 to Dec. 8 (count mail in ballots, handle legal disputes)

Electoral college delegates meet

- Dec. 14 (state electors meet “in their respective states,” potential Congressional objections)

Electoral College disbanded

- Dec 14 (whether or not 270 votes threshold for winner is met)

New 117th Congress meets

- Contingent election Jan. 6 – Jan 20 (New 117th Congress holds contingent election if Electoral College is unable to declare a winner)

Inauguration Day

- Jan 20, 2021 (if President still not selected, no path for current President to remain in office)



Q2 – Asset Allocation Review

- Q2 Rebalancing Activity

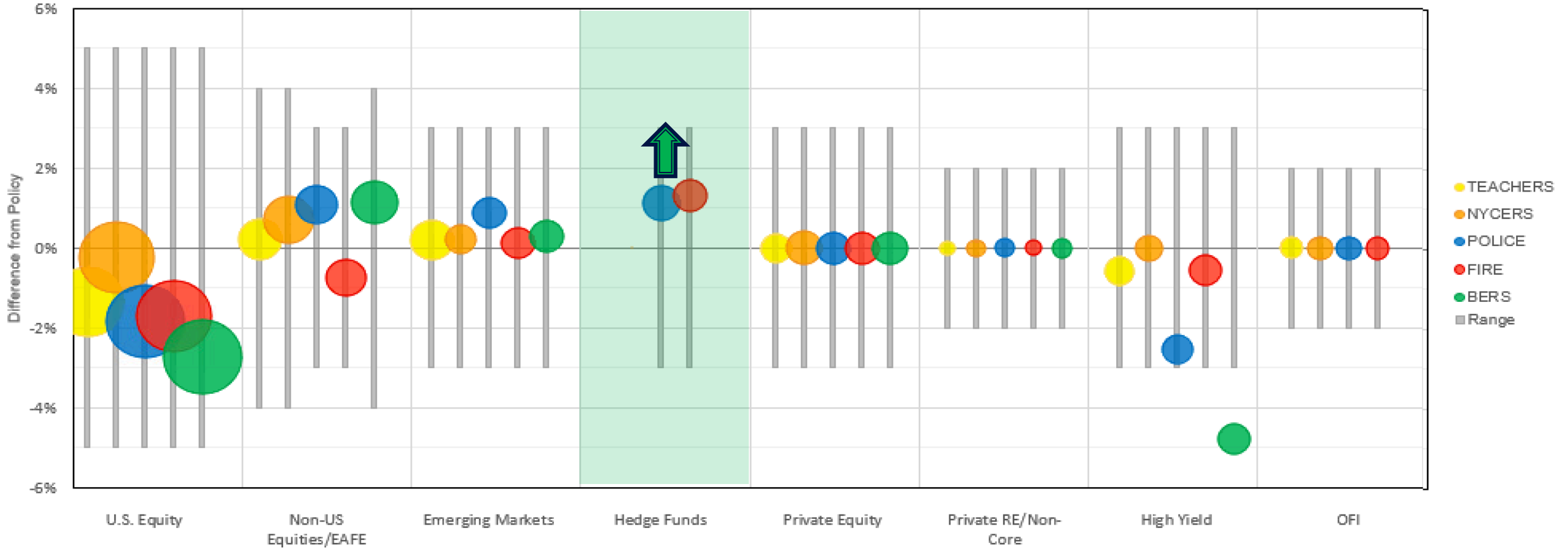
	From	Amount (\$M)	To	Amount (\$M)
TRS	Equity	350	Cash Desk	570
	Short Duration	100	Equity	450
	LI Duration	1,295	IG Credit	835
	TIPS	380	Mortgage	270
NYCERS	Equity	200	Cash Desk	760
	LI Duration	1,560	IG Credit	560
	TIPS	500	Mortgage	940
POLICE	LI Duration	1,425	Cash Desk	650
	Long Duration	125	Equity	350
	TIPS	250	IG Credit	500
			Mortgage	300
FIRE	LI Duration	335	Cash Desk	35
			Equity	140
			IG Credit	70
			Mortgage	90
BERS	LI Duration	45	Cash Desk	85
	TIPS	40		
Total Outflow		6,605	Total Inflow	6,605
	Equity	550	Cash Desk	2,100
	Short Duration	100	Equity	940
	LI Duration	4,660	IG Credit	1,965
	Long Duration	125	Mortgage	1,600
	TIPS	1,170		



Q2 – Asset Allocation Review - Growth

Relative Mix to Adjusted New Policy Weights

Policy vs Actual Asset Allocation - Growth

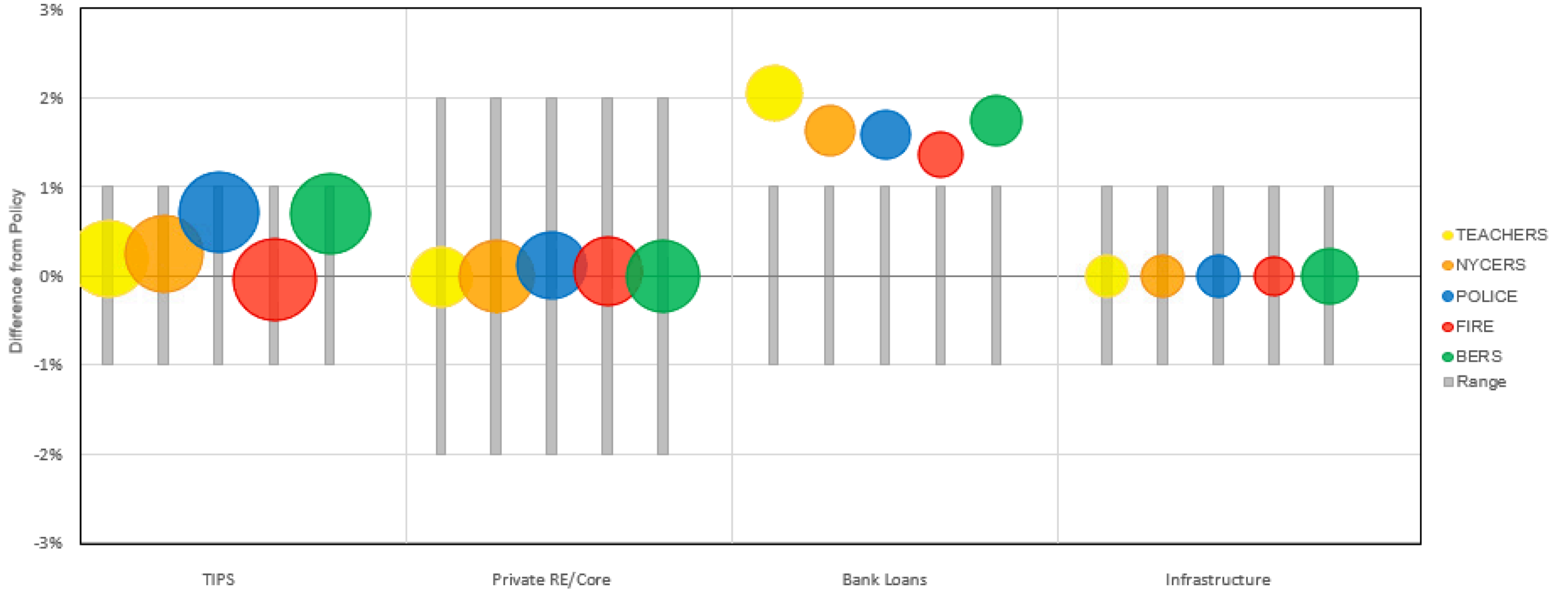


Source: State Street

Q2 – Asset Allocation Review – Inflation Protection

Relative Mix to Adjusted New Policy Weights

Policy vs Actual Asset Allocation - Inflation Protection

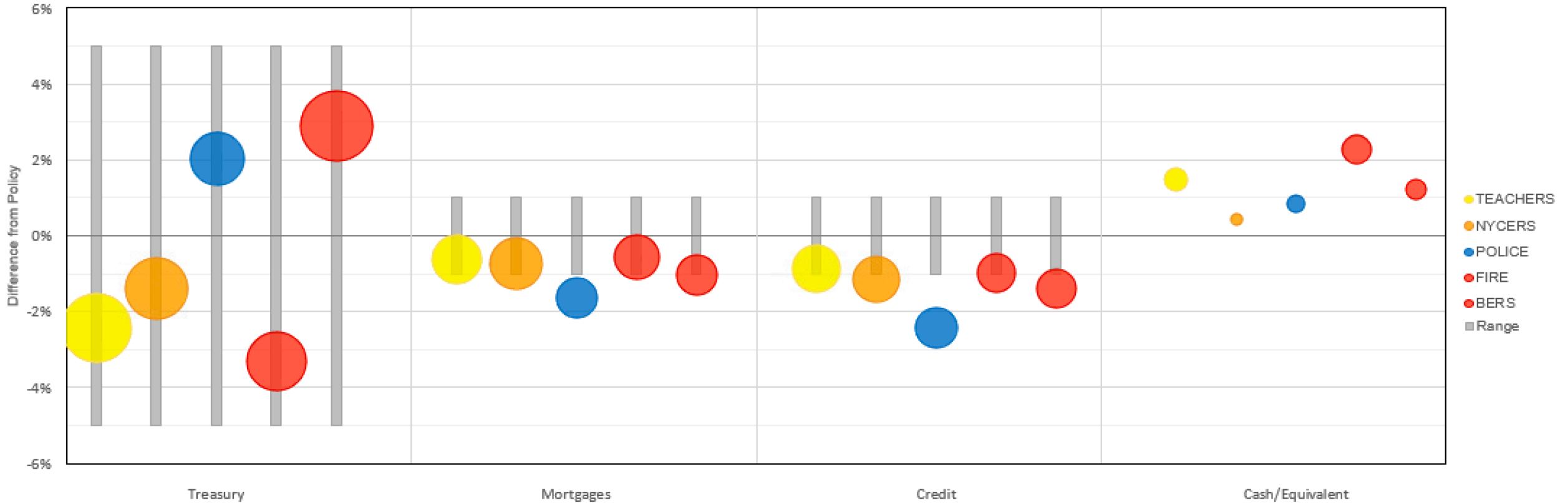


Source: State Street

Q2 – Asset Allocation Review - Deflation Protection

Relative Mix to Adjusted New Policy Weights

Policy vs Actual Asset Allocation - Deflation Protection



Source: State Street

Q2- Asset Allocation Review

- **Core Bond Portfolio Duration, Actual Vs. Target (as of 06/30/2020)**

	TRS	NYCERS	Police	Fire	BERS
Previous Duration Target	11.93	8.63	12.24	12.15	8.56
New Duration Target	8.10	6.04	9.44	8.38	6.04
Duration as of 03/31/2020	8.77	7.19	11.48	9.15	9.13
Duration as of 06/30/20	8.53	6.40	10.12	8.50	7.52

Source: State Street

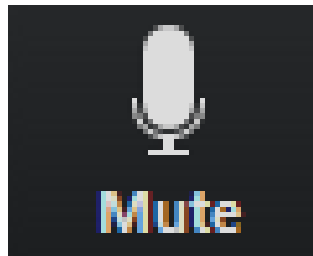


QUESTIONS?

If you would like to ask a question



When you're done, hit mute again



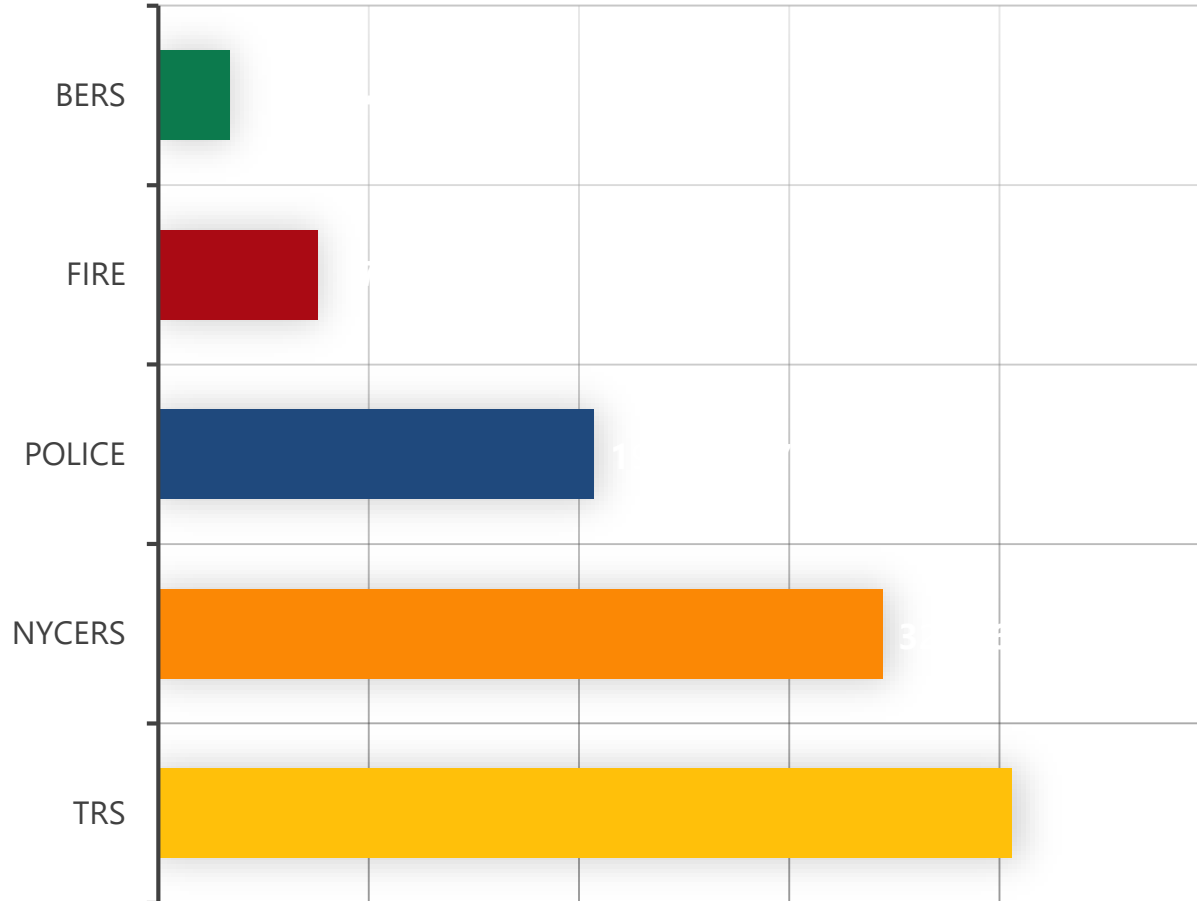
PERFORMANCE REPORTING

2nd Quarter 2020

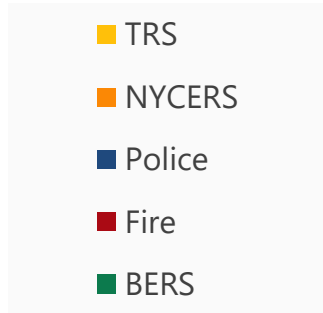


NYC Retirement Systems AUM (% , in millions)

\$213,577m Total AUM for all 5 Systems as of June 30, 2020



Assets (in millions)



Source: State Street

Total NYC Pension Fund Net Performance as of 06/30/2020

NYC Pension System	Portfolio Std Dev - 1 yr.	3 Month	Fiscal YTD	Three Year Trailing	Five Year Trailing
NYCERS	11.64	10.00%	3.58%	6.40%	6.68%
BERS	11.61	11.11%	5.72%	7.68%	7.60%
TRS	11.28	10.31%	4.89%	6.84%	6.91%
FIRE	10.92	9.94%	4.81%	7.06%	7.02%
POLICE	10.91	9.81%	4.67%	6.99%	7.01%
Public Mkt Equiv 65/35		13.60%	5.21%	6.69%	6.54%
Median Fund - TUCS		7.94%	3.26%	6.23%	6.63%

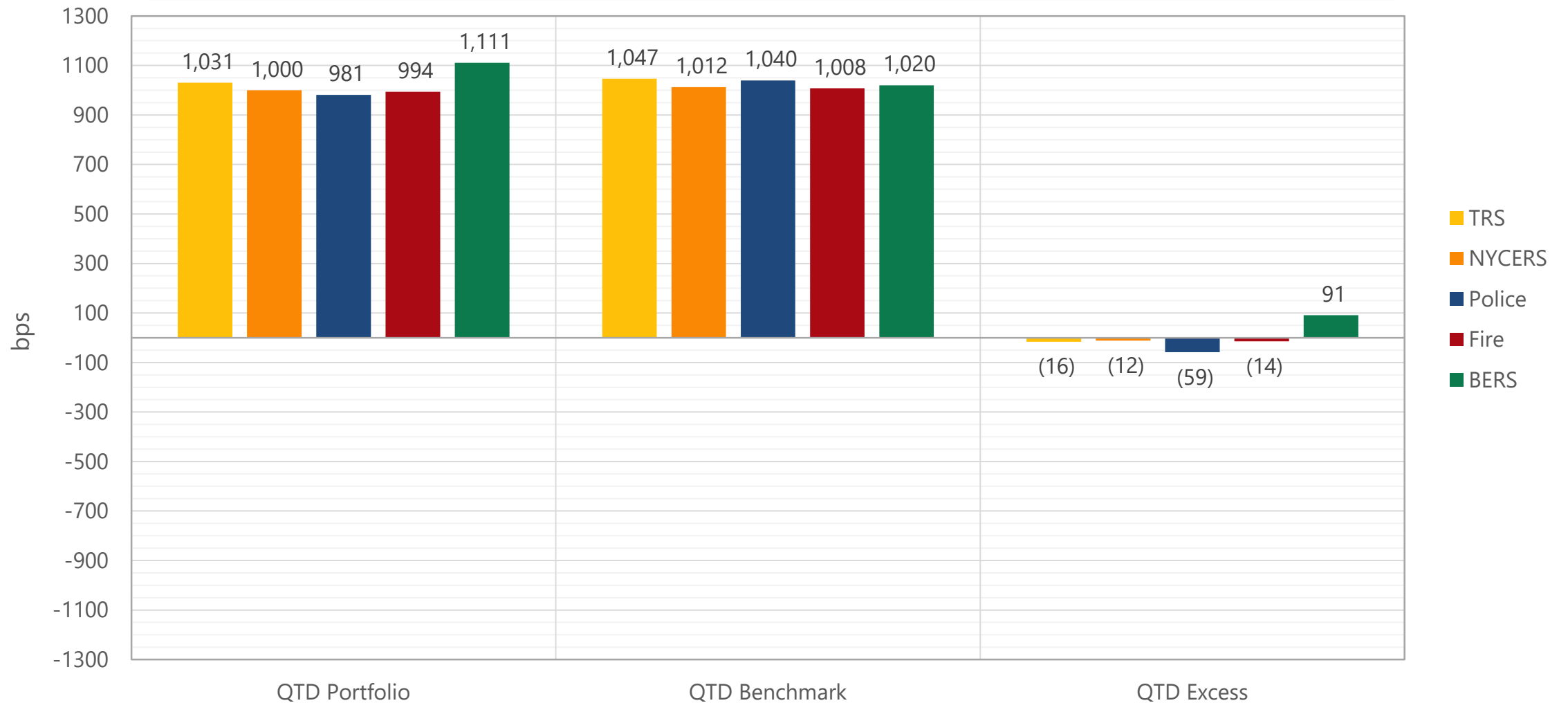
Net of mgr. fees in public asset classes are recorded on an accrual basis. Private markets data is reported on a lagged basis.

Source: State Street



Quarter to Date Return as of 06/30/2020 – Total Portfolio

Basis Points of Excess Return (SSB **T**, **N**, p.14; **F** p.16 ; **P** p.17; **B** p.19)

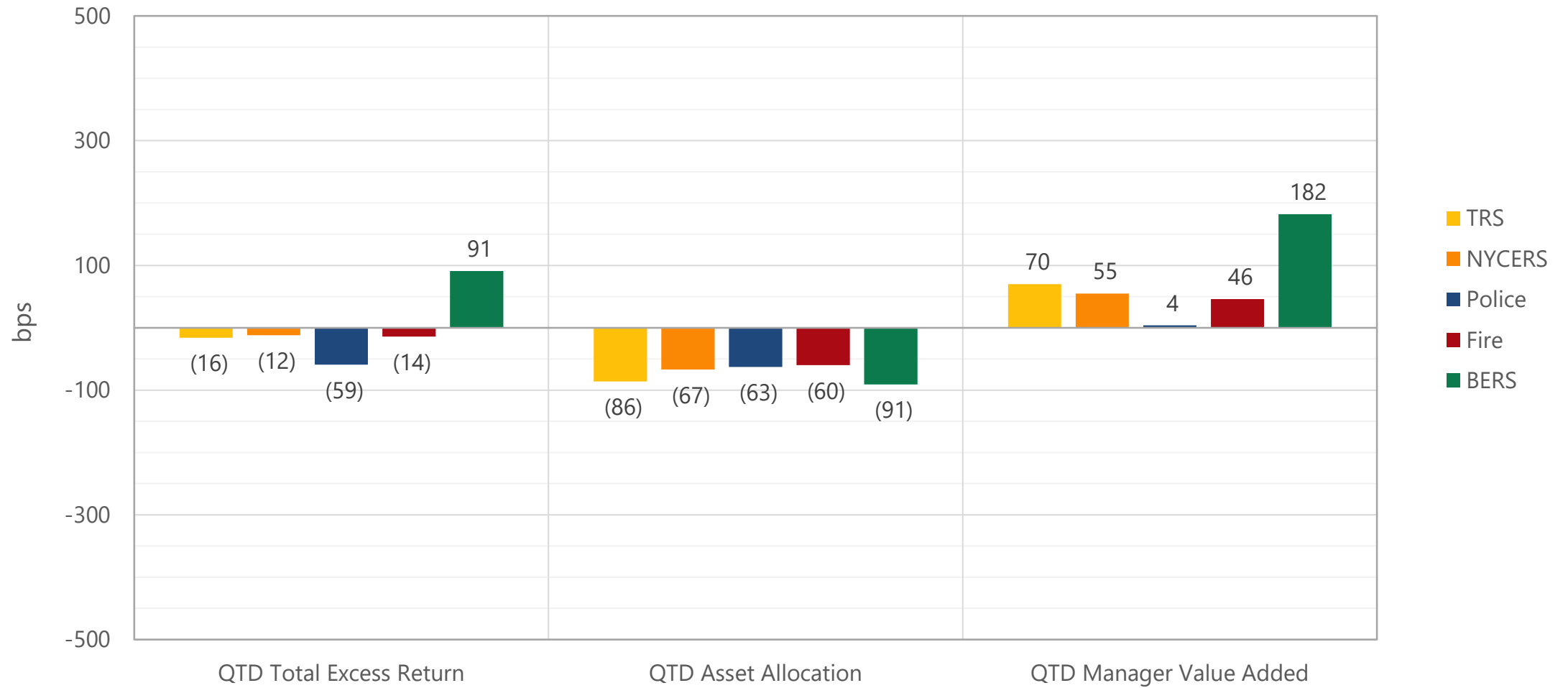


Source: State Street



Quarter to Date as of 06/30/2020 Excess Return – Total Portfolio

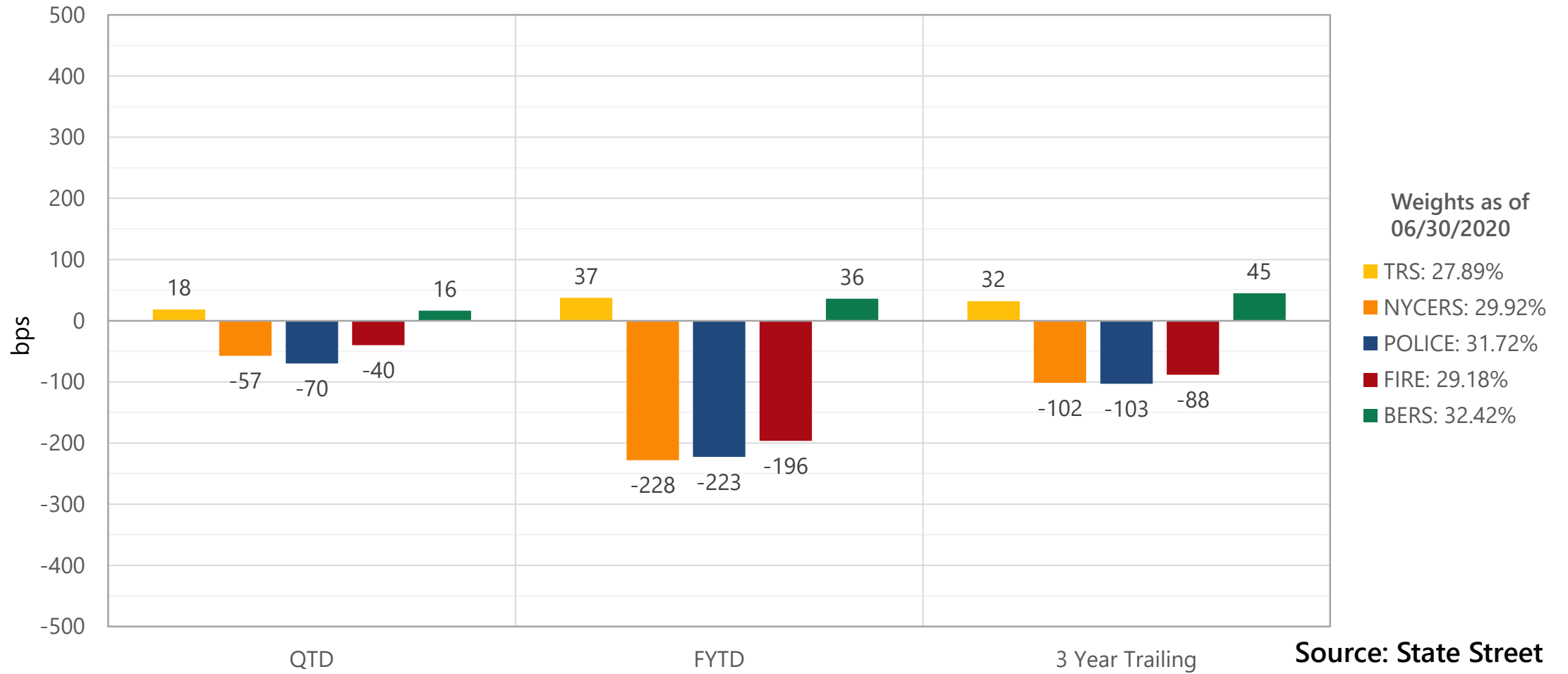
Basis Points of Excess Return (SSB **T, N**, p.14; **F** p.16 ; **P** p.17; **B** p.19)



Source: State Street

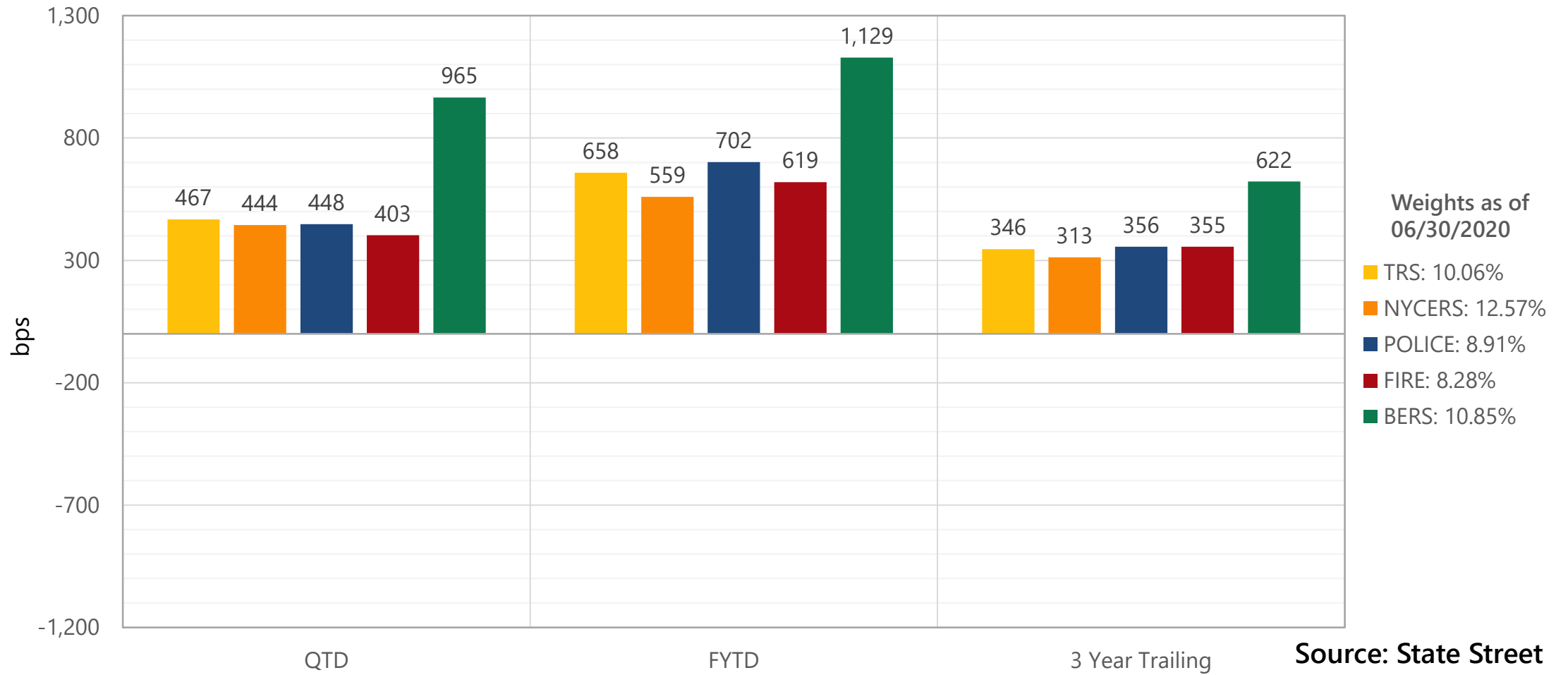
Value Added – Total Domestic Equity

Basis Points of Excess Return (SSB T, N p.30; F p.32; P p.33; B p.35)



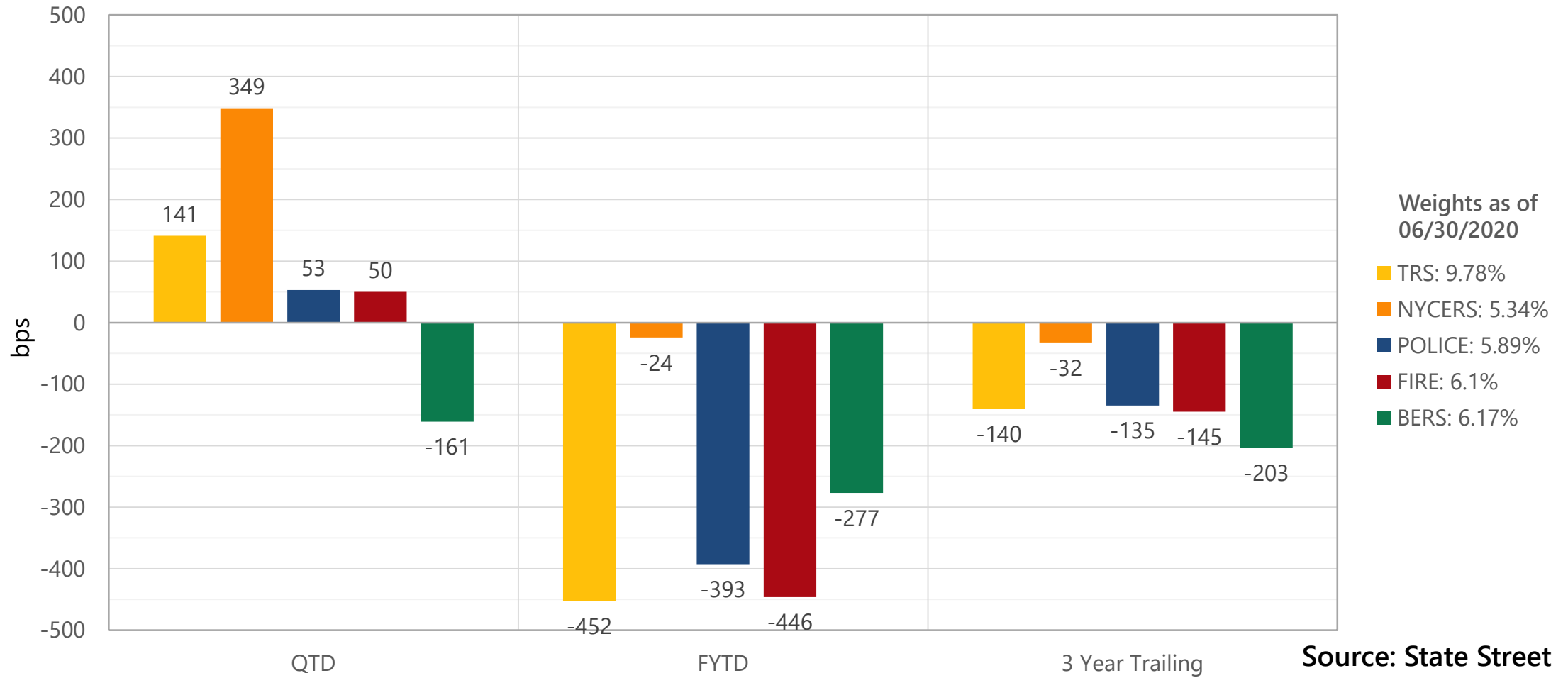
Value Added – Total World Ex-USA

Basis Points of Excess Return (SSB **T**, **N** p.31; **F** p.34; **P** p.35; **B** p.36)



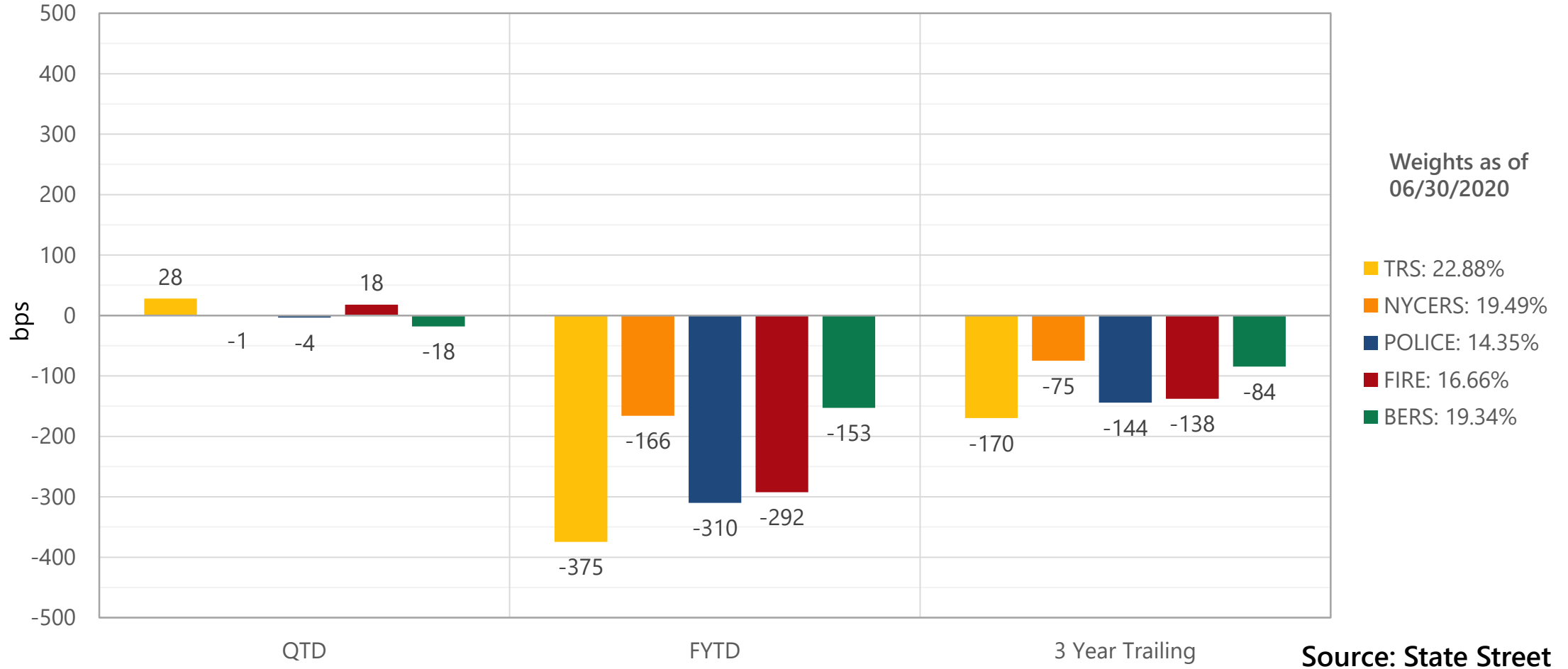
Value Added – Total Emerging Markets

Basis Points of Excess Return (SSB T, N p.32; F p.35; P, B p.36)



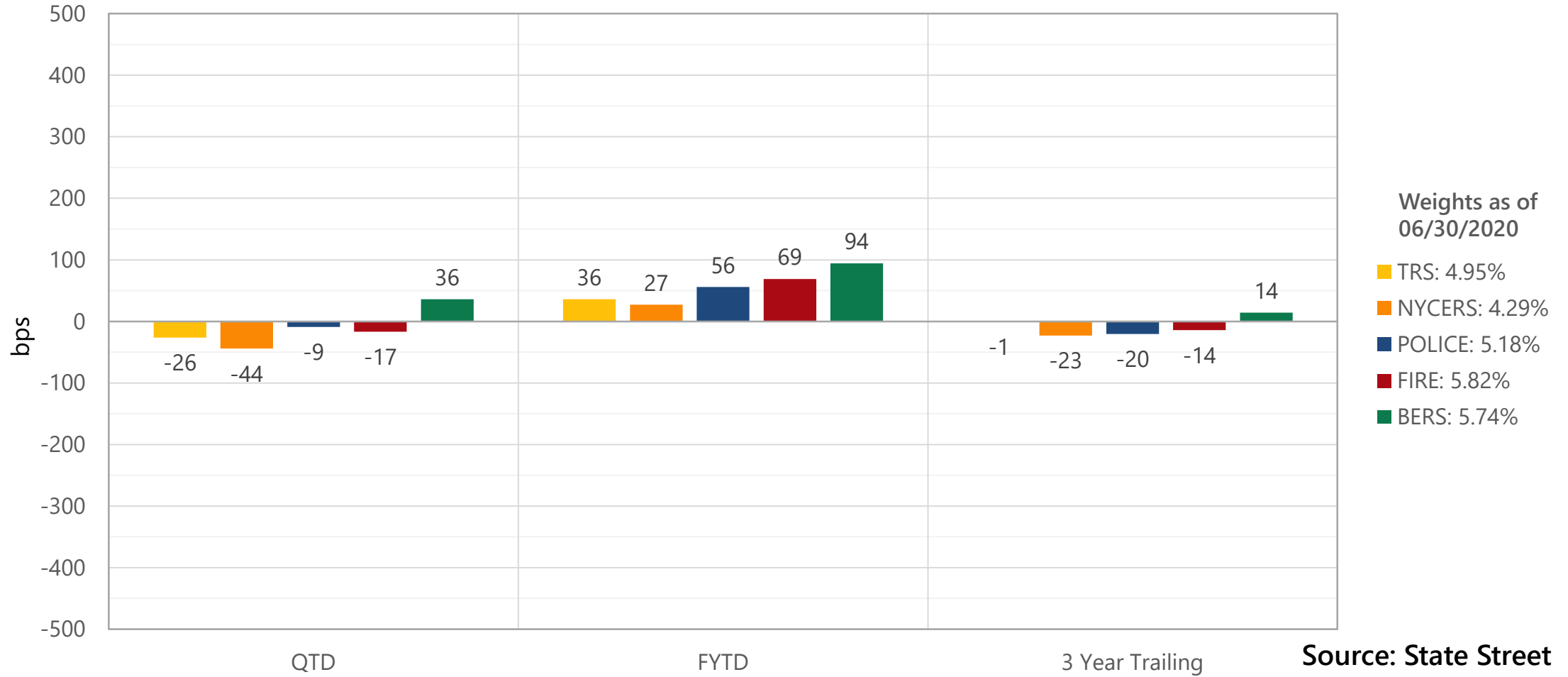
Value Added – Total Structured Fixed Income

Basis Points of Excess Return (SSB T p.34; N p.35; F, B p.38 ; P p.39)



Value Added – High Yield

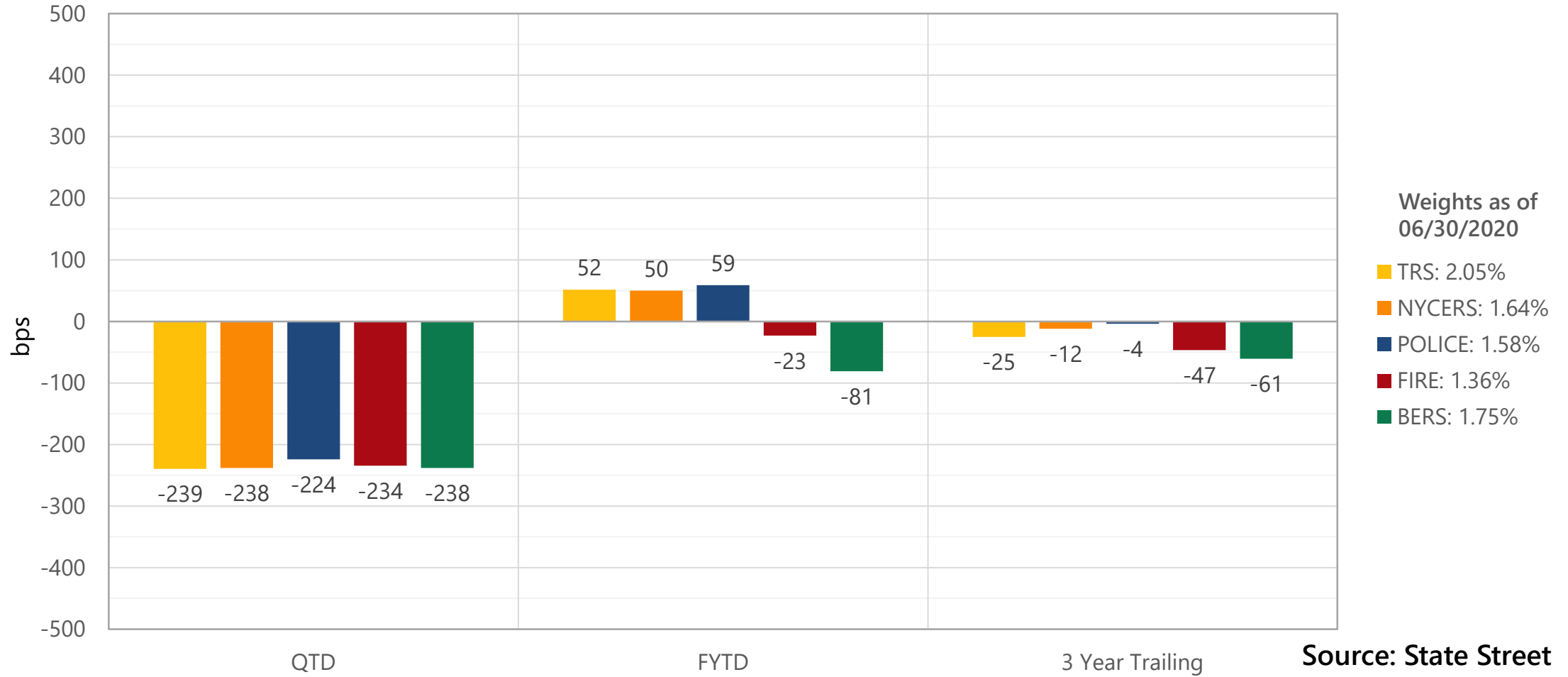
Basis Points of Excess Return (SSB T p.36; N p.37; B, p.39; F, p.40; P p.41)



Source: State Street

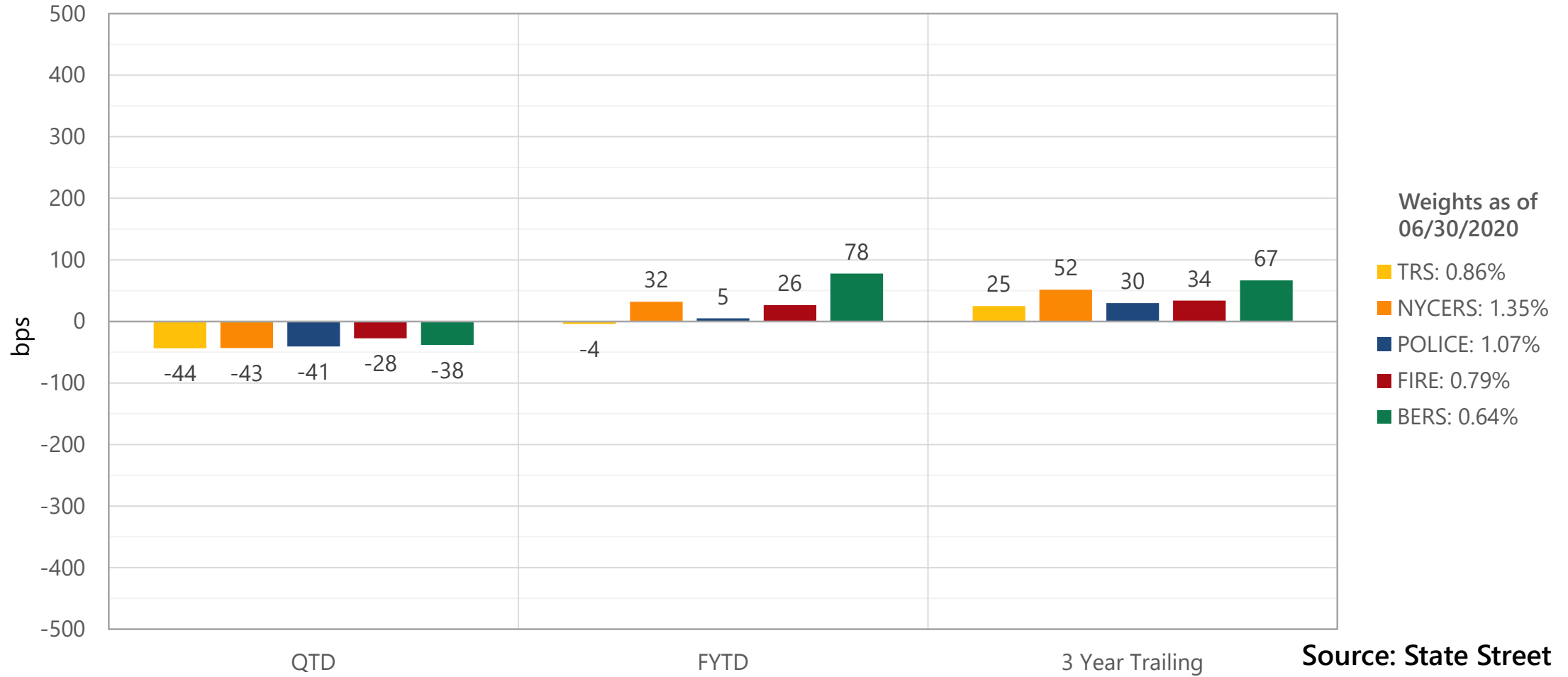
Value Added – Bank Loans

Basis Points of Excess Return (SSB T p.36; N p.37; B, p.39; F, p.40; P p.41)



Value Added – Economically Targeted Investments

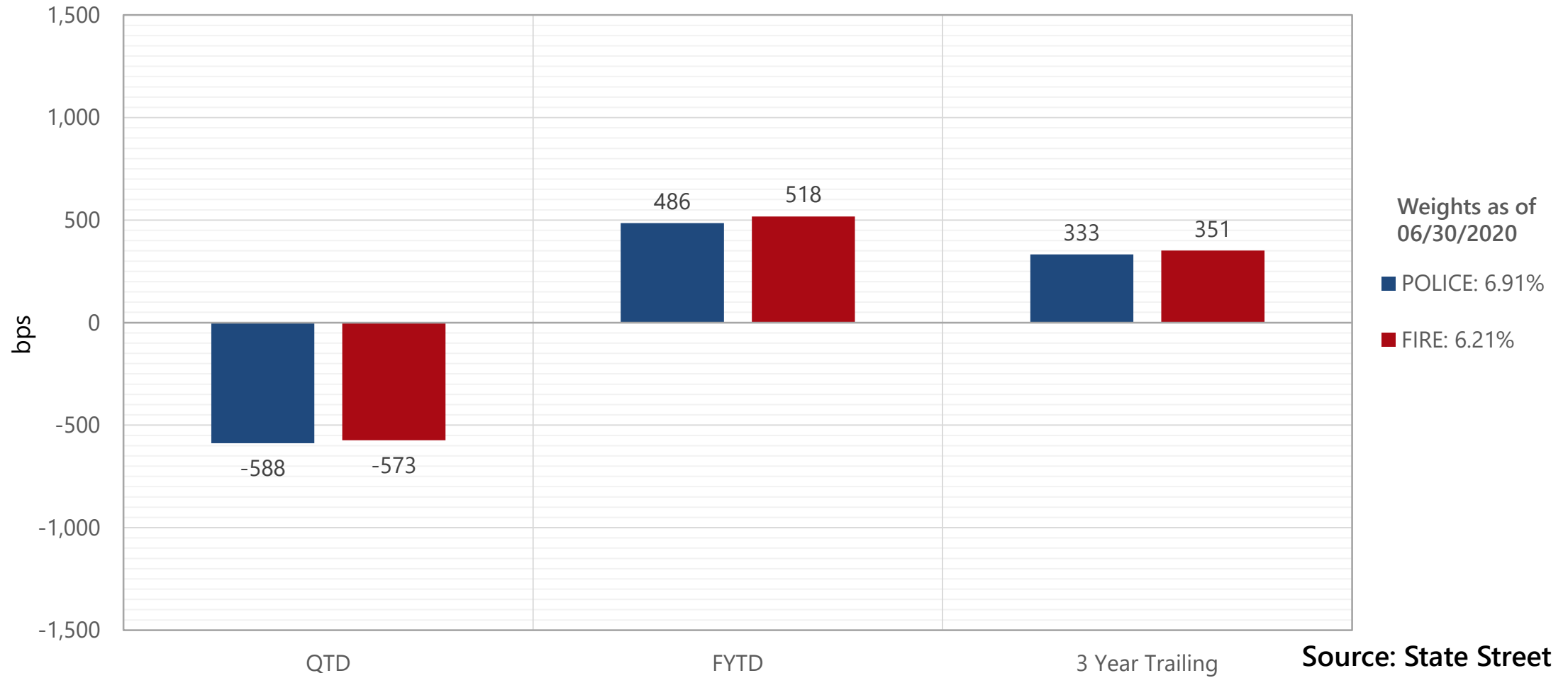
Basis Points of Excess Return (SSB T p.35; N p.36; B, p.38; F p.39; P p.40)



Source: State Street

Value Added - Hedge Funds

Basis Points of Excess Return



Hedge Fund Performance Less Tactical Trade

	Q2 2020	FYTD	T3Y
FIRE	3.55%	5.84%	6.71%
POLICE	3.38%	5.48%	6.47%
HFRI+ 100 bps	8.20%	1.53%	3.28%

Police and Fire returns are shown net of fees

Source: Aksia



Tactical Trade Performance

Tactical Portfolio (Combined)			
	Q2 2020	YTD	FYTD
Police & Fire Tactical Hedge Fund Trade	-6.05%	22.25%	13.21%
RUSSELL 3000	22.03%	-3.48%	6.53%
Outperformance	-28.08%	25.73%	6.68%

Police and Fire Tactical Hedge Fund Trade returns are shown net of fees

Source: Aksia

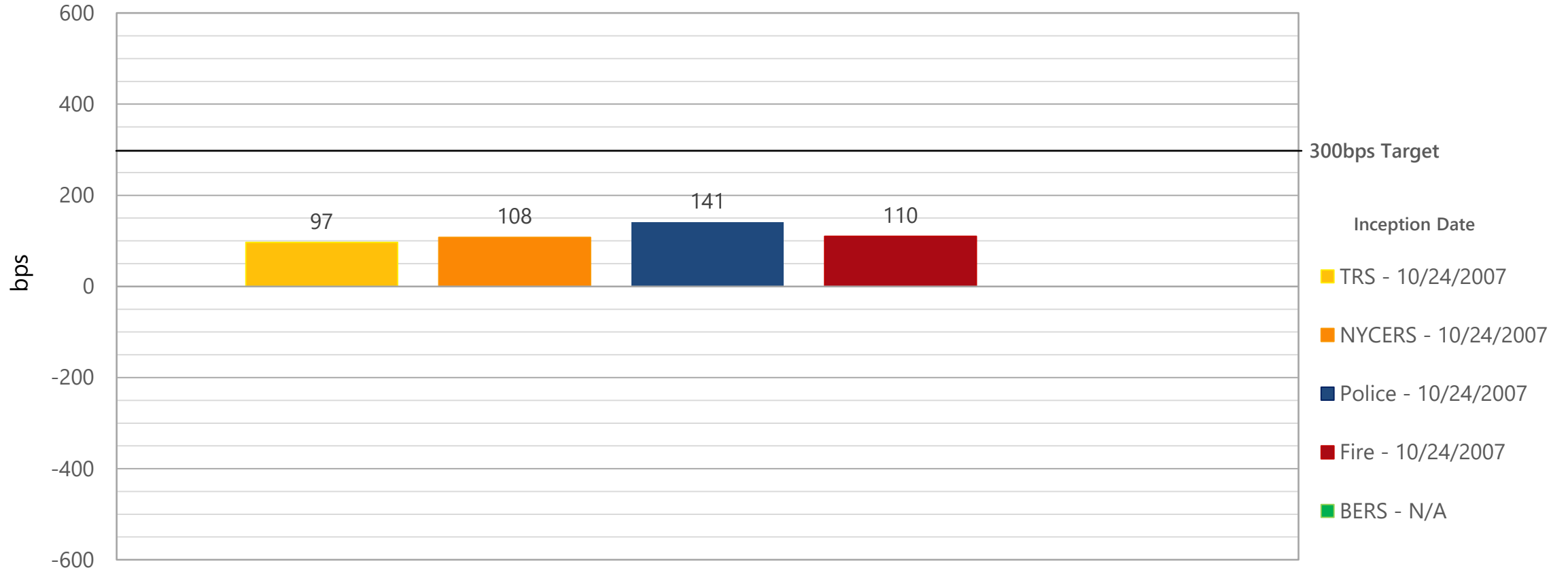


PRIVATE MARKET DATA



Value Added - Opportunistic Fixed Income (OFI)

Basis Points of Cumulative IRR above Public Market Equivalent



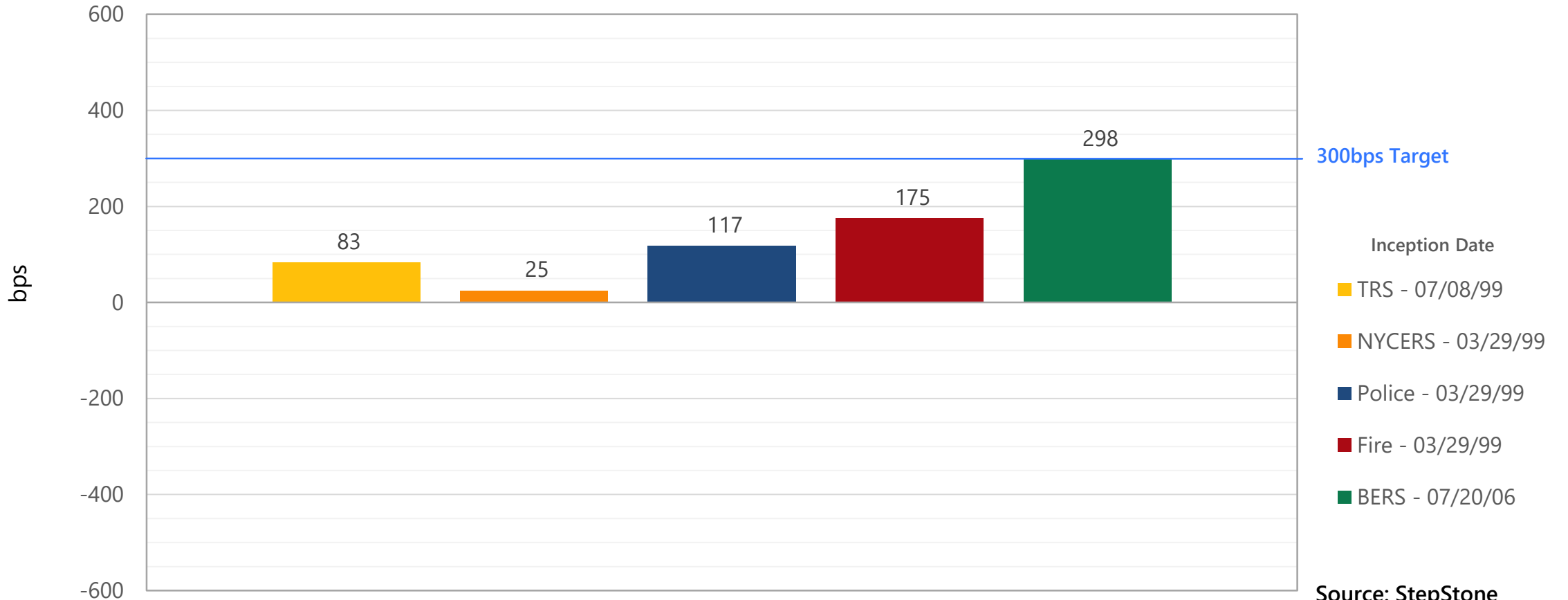
Excess Return Since Inception; PME Benchmark: 50% JP Morgan Global High Yield 50% CS Leveraged Loans as of 06/30/20

Source: State Street

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

Value Added - Private Equity

Basis Points of Cumulative IRR above Public Market Equivalent



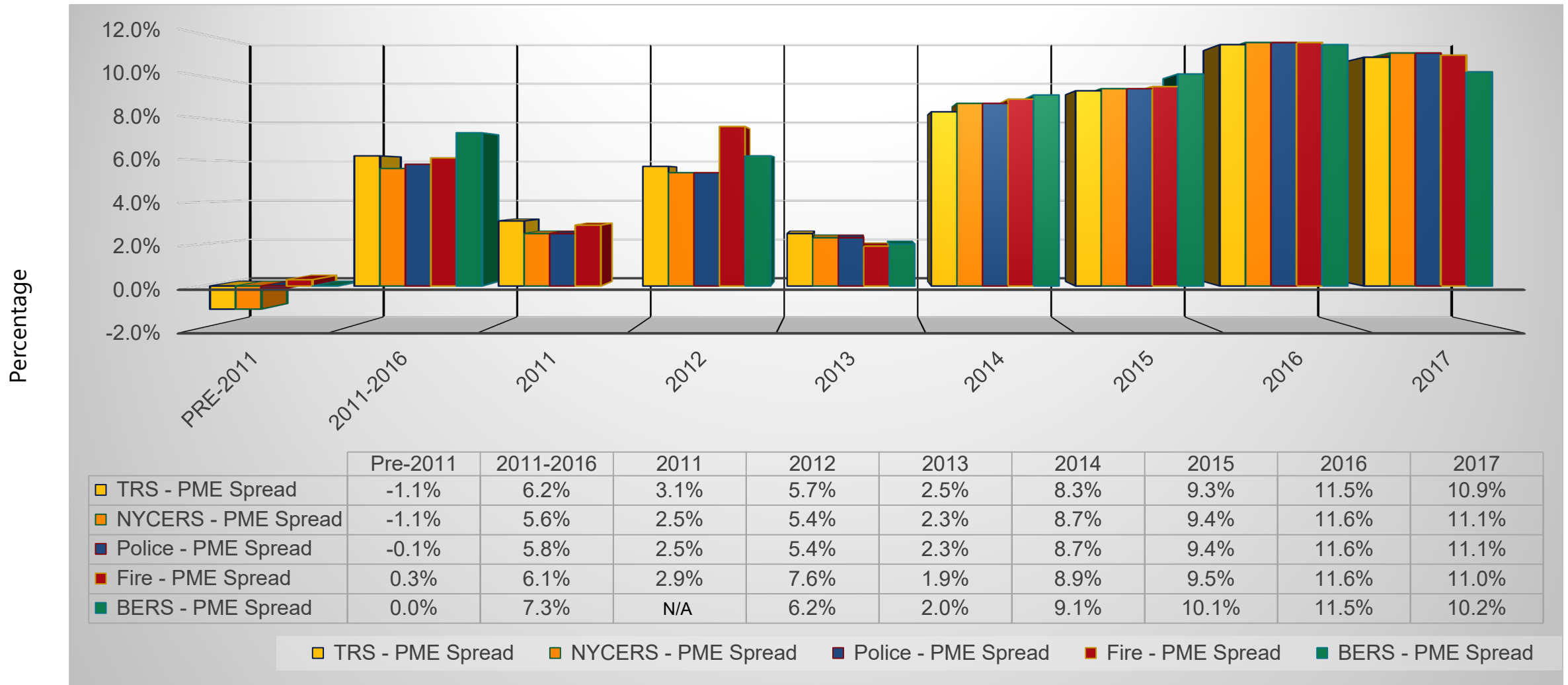
Excess Return Since Inception; The PE Benchmark is the Russell 3000 + 300 bps as of 3/31/20

Source: StepStone Group & Hamilton Lane

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



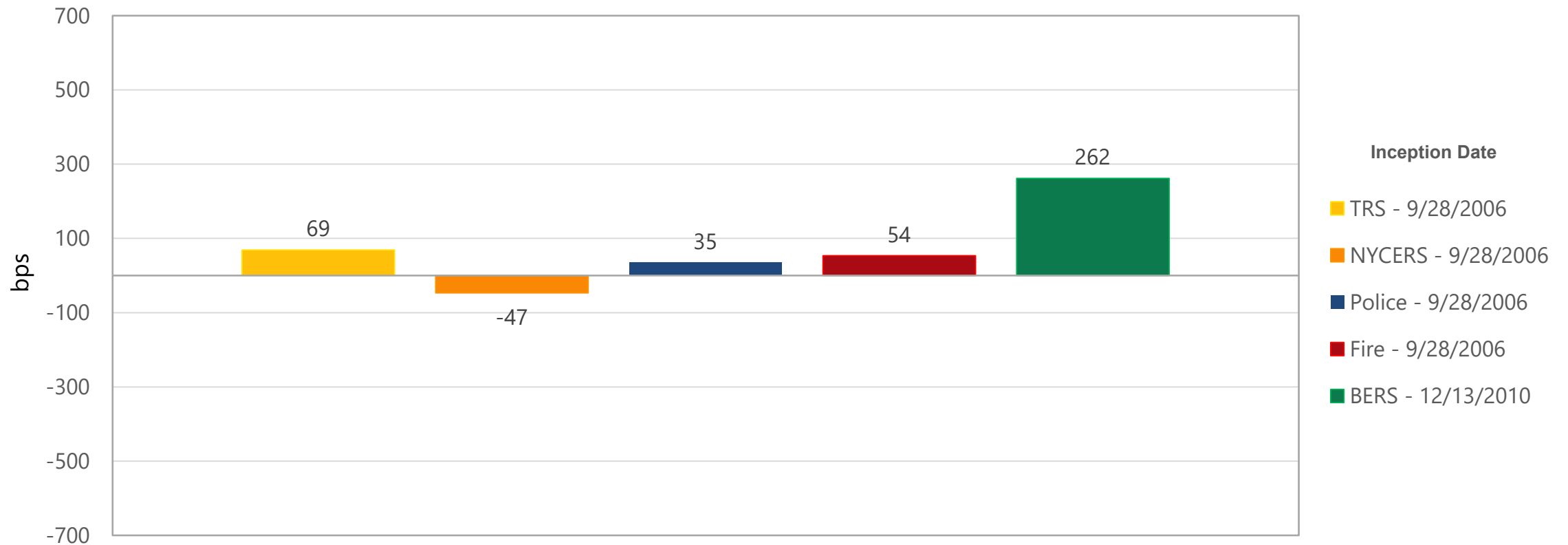
Private Equity Value Added – PME Spread By Vintage Year as of 3/31/20



Source: BAM, StepStone Group, & Hamilton Lane

Value Added - Private Real Estate - Core

Basis Points of Cumulative IRR above Public Market Equivalent



Excess Return Since Inception; Core PME = 40% Russell 3000 & 60% Barclay Agg. as of 3/31/20

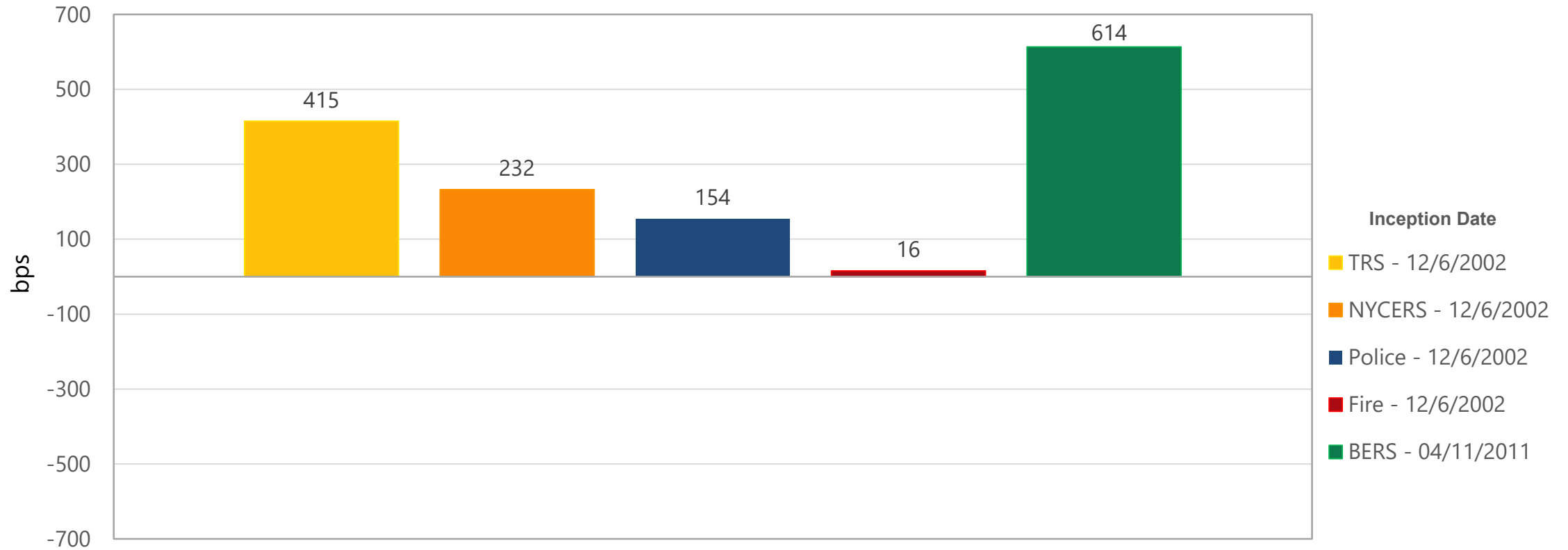
Source: State Street

The PME Spread is the difference between the IRR and the Core PME Return.



Value Added - Private Real Estate – Non-Core

Basis Points of Cumulative IRR above Public Market Equivalent



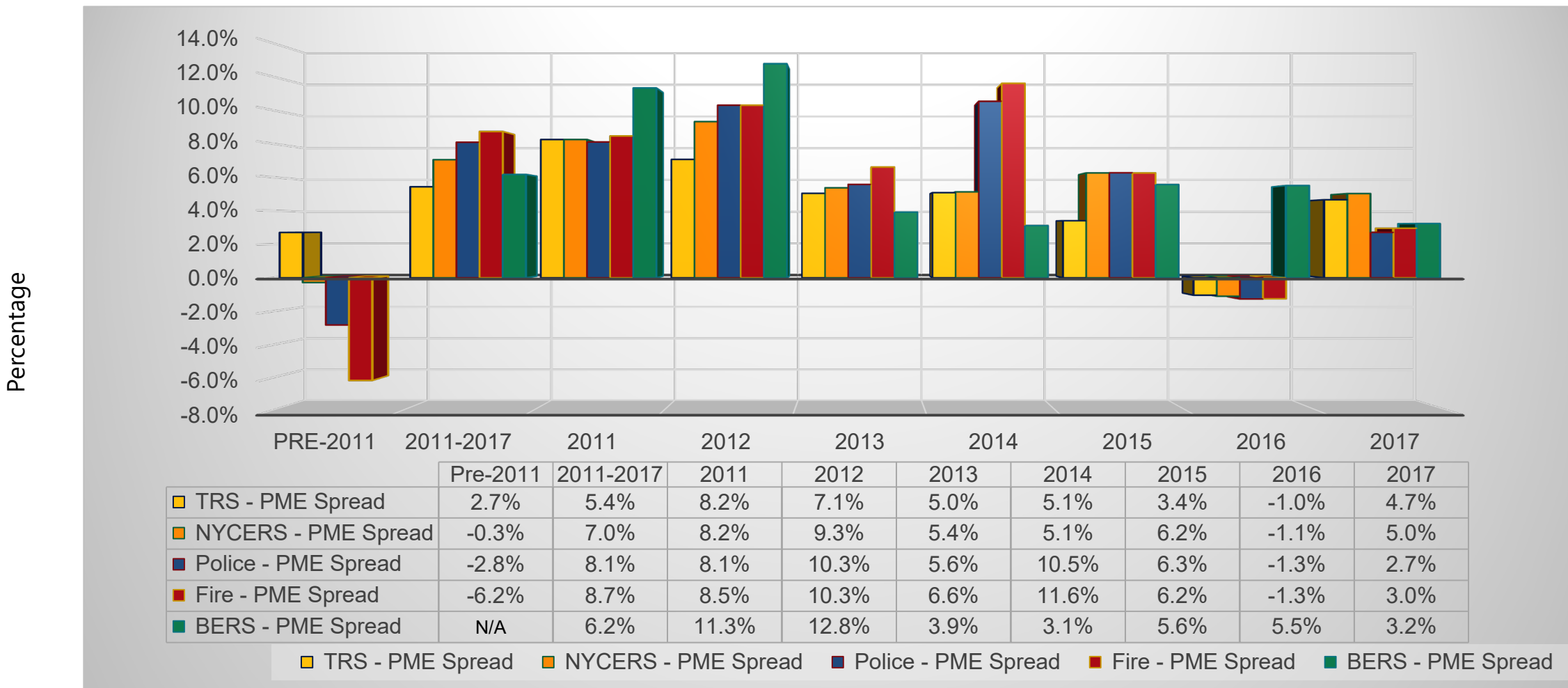
Excess Return Since Inception; Non-core PME = 60% Russell 3000 & 40% Barclay Agg. as of 3/31/20

Source: State Street

The PME Spread is the difference between the IRR and the Non-core PME Return.



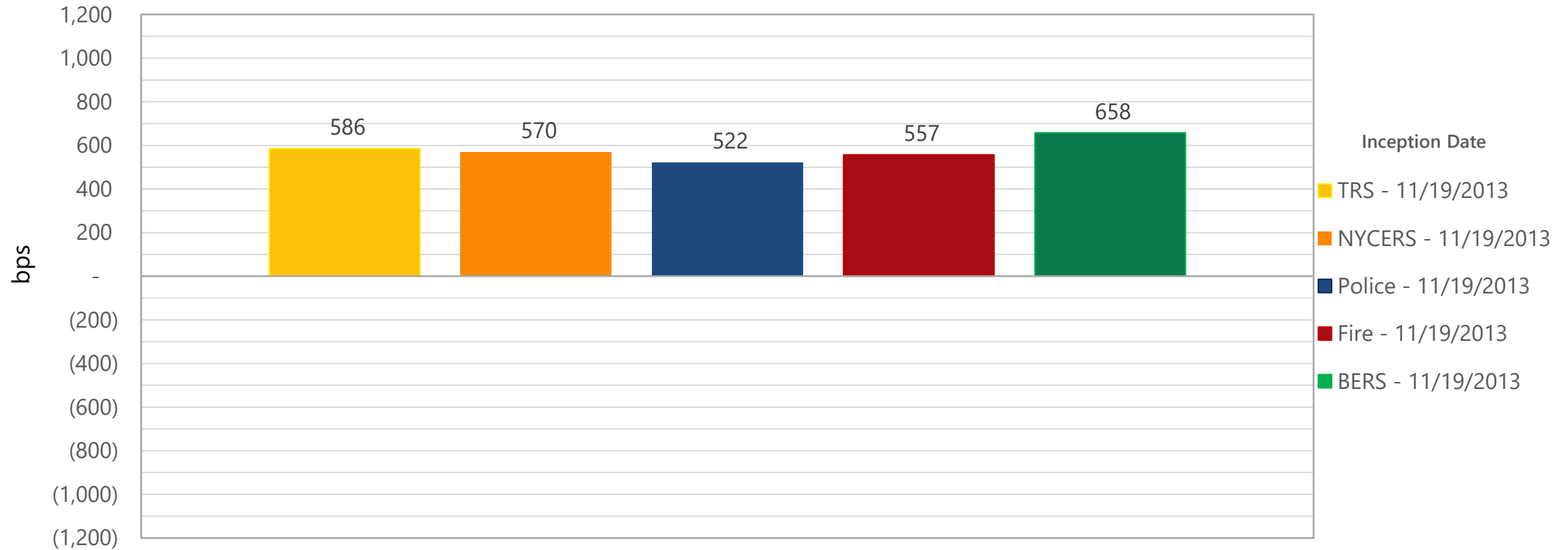
Private Real Estate (Non-Core) Value Added - PME Spread By Vintage Year as of 3/31/20



Source: State Street

Value Added - Infrastructure

Basis Points of Cumulative IRR above Public Market Equivalent



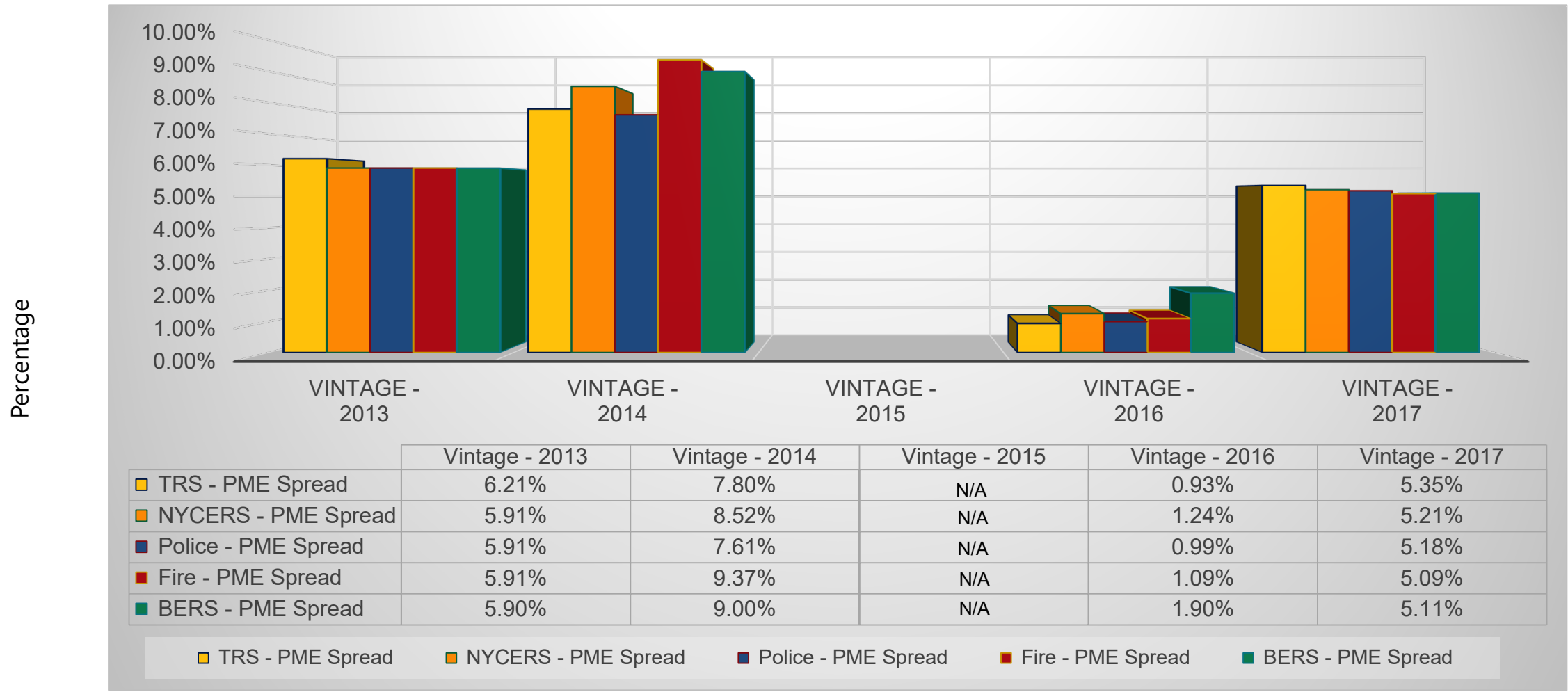
Excess Return Since Inception; PME: 50% R3000 & 50% Barclays Agg. as of 3/31/20

Source: StepStone Group

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



Infrastructure Value Added – PME Spread By Vintage Year as of 3/31/20



Source: StepStone Group

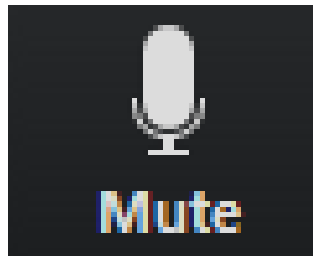


QUESTIONS?

If you would like to ask a question



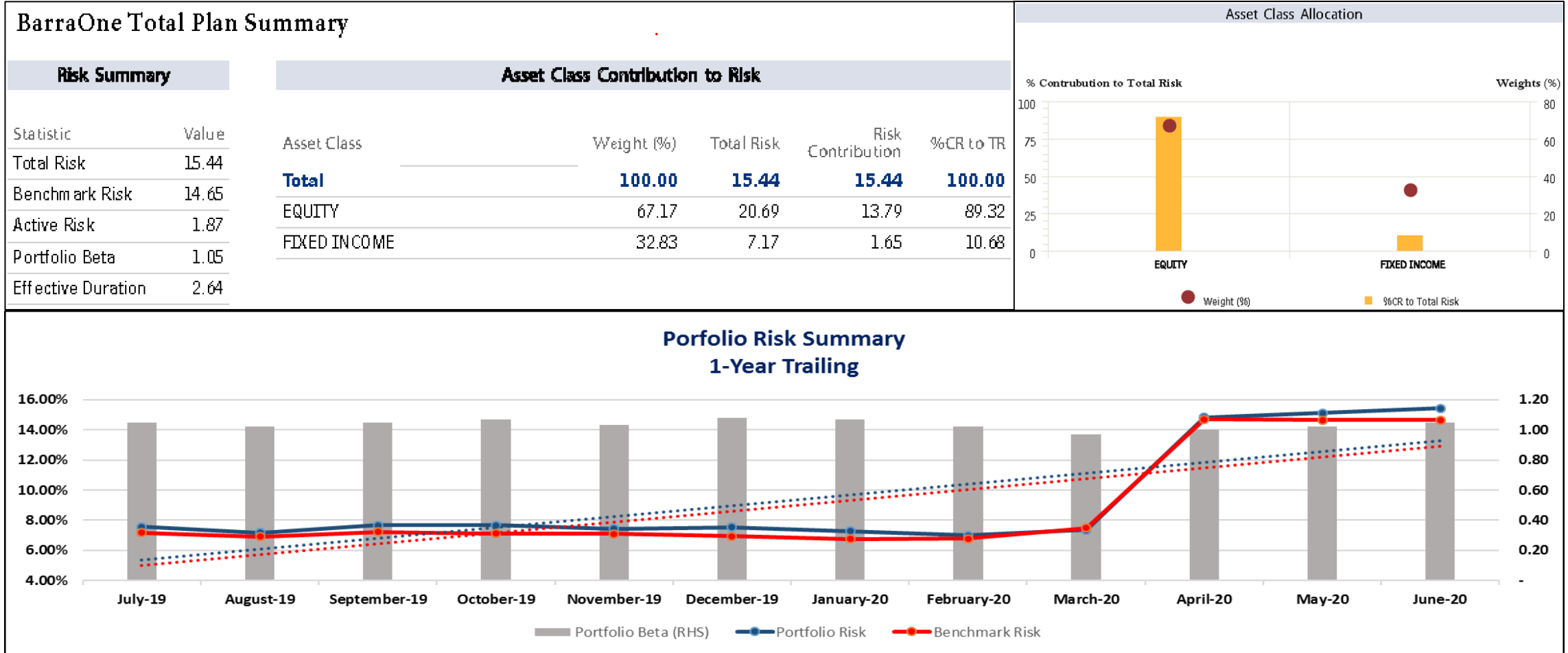
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Risk Update

2nd Quarter 2020

Total Plan Summary

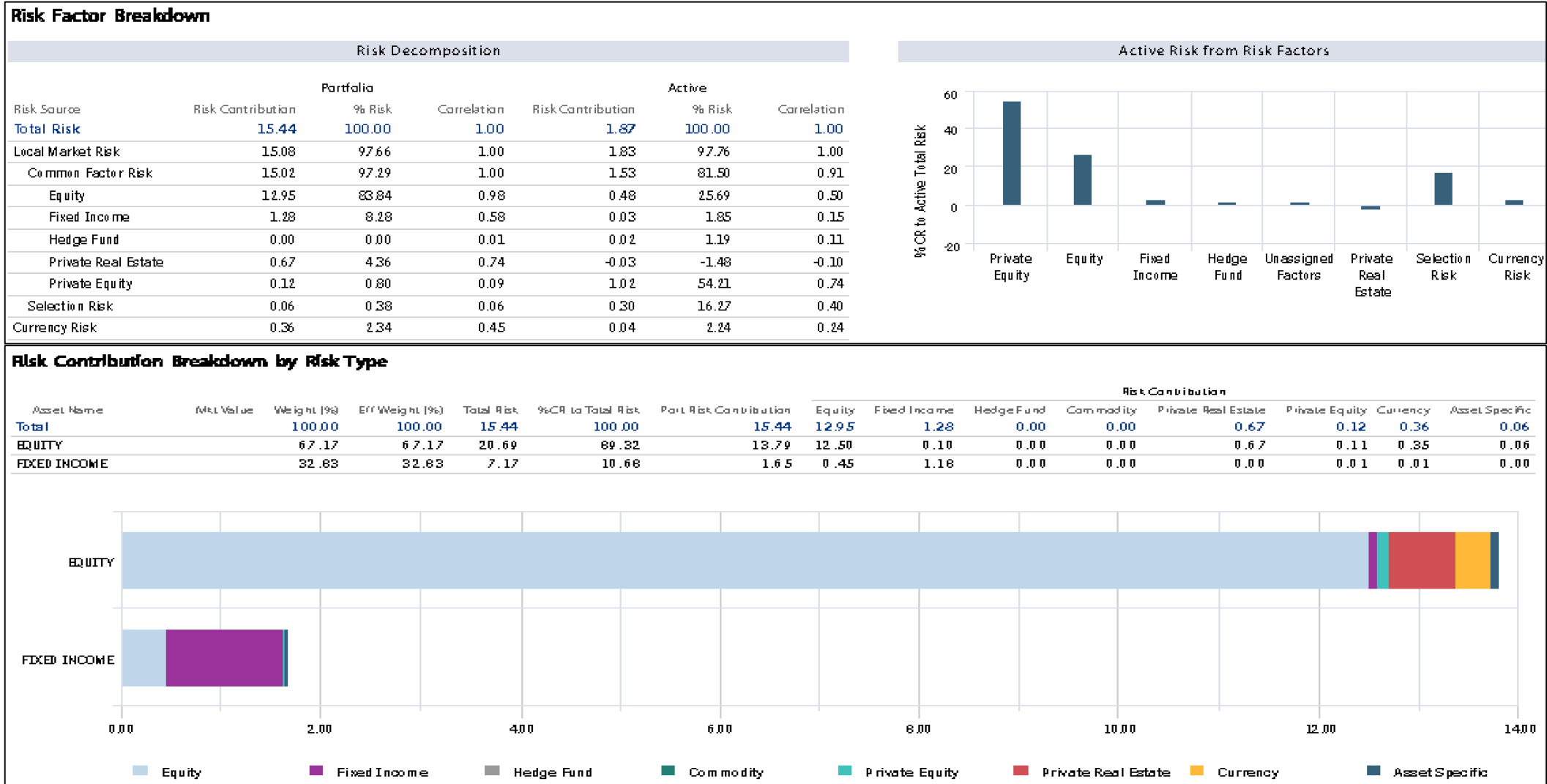


Source: MSCI



Total Plan Summary

The risk shown here is attributed to factors, which can be represented in multiple asset classes.



Source: MSCI



COVID Scenario Analysis

V-Shaped Recovery	U-Shaped Recovery
<ul style="list-style-type: none"> • Pandemic Fades in 2H 2020 • Relatively speedy market recovery—no long-term growth shock • Easing financial conditions, rising treasury rates in 2H 2020 • FX rates converge to pre-COVID levels 	<ul style="list-style-type: none"> • Pandemic mostly fades in 2H 2020, threat of new outbreaks managed • Somewhat slower market recovery—limited long-term consequences • FX rates remain at current levels • Treasury rates slowly increase
Swoosh-Shaped Recovery	L-Shaped Recovery
<ul style="list-style-type: none"> • Recurring outbreaks continue this year or significant outbreak in 2021 • Slower market recovery resulting in W or Swoosh shape • Elevated Equity Risk Premium (ERP) due to uncertainty • Increasing sovereign spreads on peripheral European countries 	<ul style="list-style-type: none"> • Recurring outbreaks continue this year and significant outbreak in 2021 • Slowest market recovery with positive GDP growth only from 2022 • Uncertainty keeps ERP at inflated level • U.S. and German rates stay low, peripheral sovereign rates increase sharply



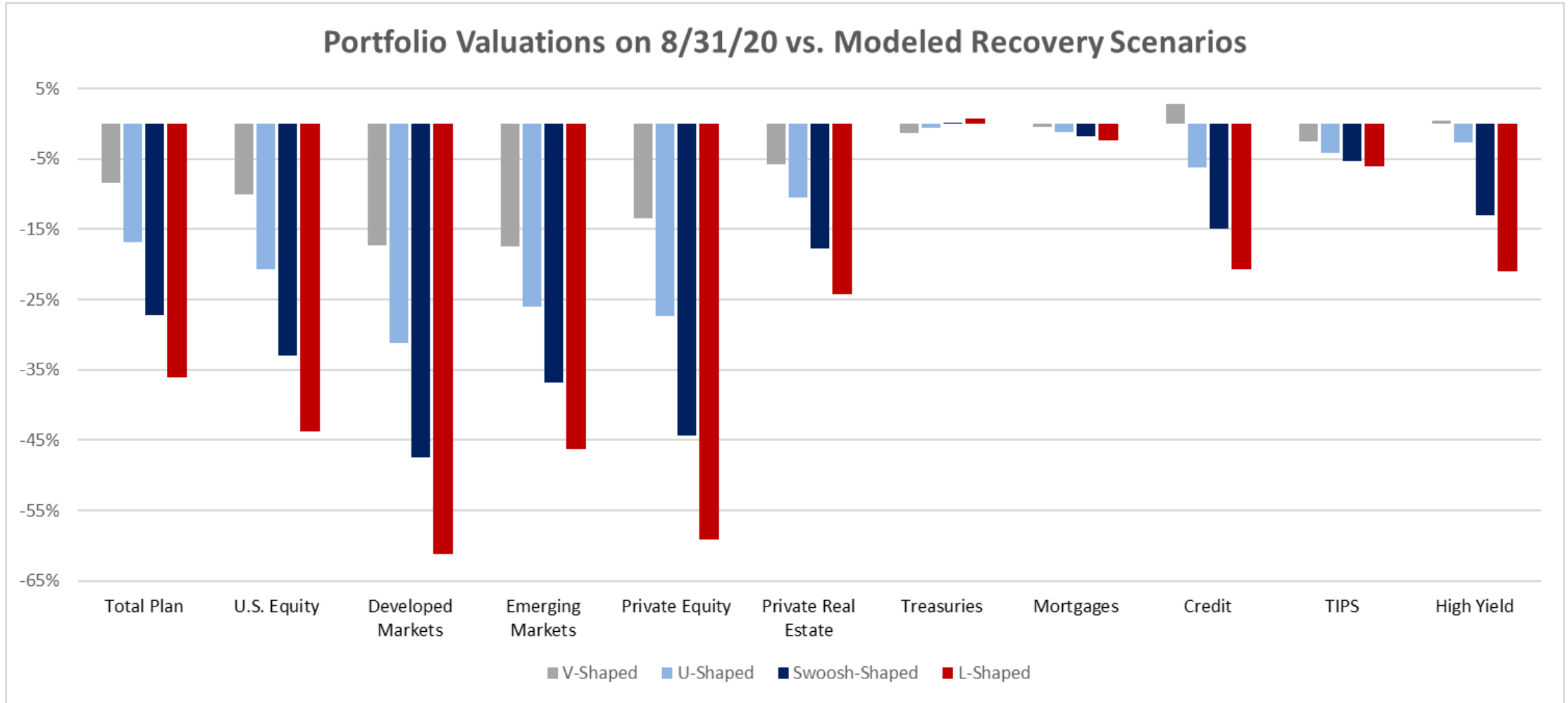
COVID Scenario Analysis

Scenario	V-Shaped	U-Shaped	Swoosh-Shaped	L-Shaped
Annualized two-year growth shock	-2.15%	-3.15%	-4.55%	-6.25%
Annualized long-term growth shock	+0.00%	-0.40%	-1.00%	-1.60%
Equity Risk Premium (ERP) shock	+0.50%	+1.00%	+1.75%	+2.50%
10-year Treasury real rate	-0.55%	-0.65%	-0.75%	-0.85%
Implied US equity returns (%)	-5%	-15%	-28%	-40%
<i>EU equity returns (%)</i>	<i>-11%</i>	<i>-22%</i>	<i>-35%</i>	<i>-46%</i>
<i>10-year Treasury yield (level)1</i>	<i>0.80%</i>	<i>0.70%</i>	<i>0.60%</i>	<i>0.50%</i>
<i>10-year Bund yield (level)</i>	<i>-0.40%</i>	<i>-0.50%</i>	<i>-0.60%</i>	<i>-0.70%</i>
<i>10-year Italian sovereign yield (level)</i>	<i>1.10%</i>	<i>1.30%</i>	<i>1.70%</i>	<i>2.50%</i>
<i>US IG bond spread shock (bps)</i>	<i>+45bps</i>	<i>+140bps</i>	<i>+265bps</i>	<i>+375bps</i>
<i>US HY bond spread shock (bps)</i>	<i>+190bps</i>	<i>+310bps</i>	<i>+580bps</i>	<i>+820bps</i>
<i>EU IG bond spread shock (bps)</i>	<i>+55bps</i>	<i>+105bps</i>	<i>+170bps</i>	<i>+230bps</i>
<i>EU HY bond spread shock (bps)</i>	<i>+175bps</i>	<i>+340bps</i>	<i>+550bps</i>	<i>+730bps</i>
<i>EM Asia IG bond spread shock (bps)</i>	<i>+30bps</i>	<i>+100bps</i>	<i>+185bps</i>	<i>+260bps</i>
<i>EM Asia HY bond spread shock (bps)</i>	<i>+65bps</i>	<i>+205bps</i>	<i>+380bps</i>	<i>+535bps</i>
<i>Oil Price(level)</i>	<i>\$45</i>	<i>\$35</i>	<i>\$25</i>	<i>\$20</i>
<i>EURUSD(level)</i>	<i>1.12</i>	<i>1.09</i>	<i>1.05</i>	<i>1.00</i>
Implied inflation (level)	1.35%	1.35%	1.35%	1.35%

Note: Shock levels relative to February 19, 2020 market peak.



COVID Scenario Analysis

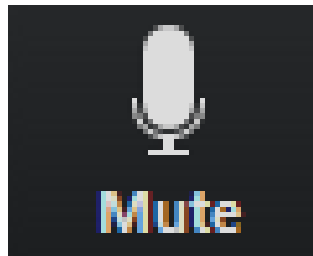


QUESTIONS?

If you would like to ask a question



When you're done, hit mute again



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

Quarterly Fund Performance Overview (Public):



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

Total Fund Overview



Teachers' Retirement System of New York City

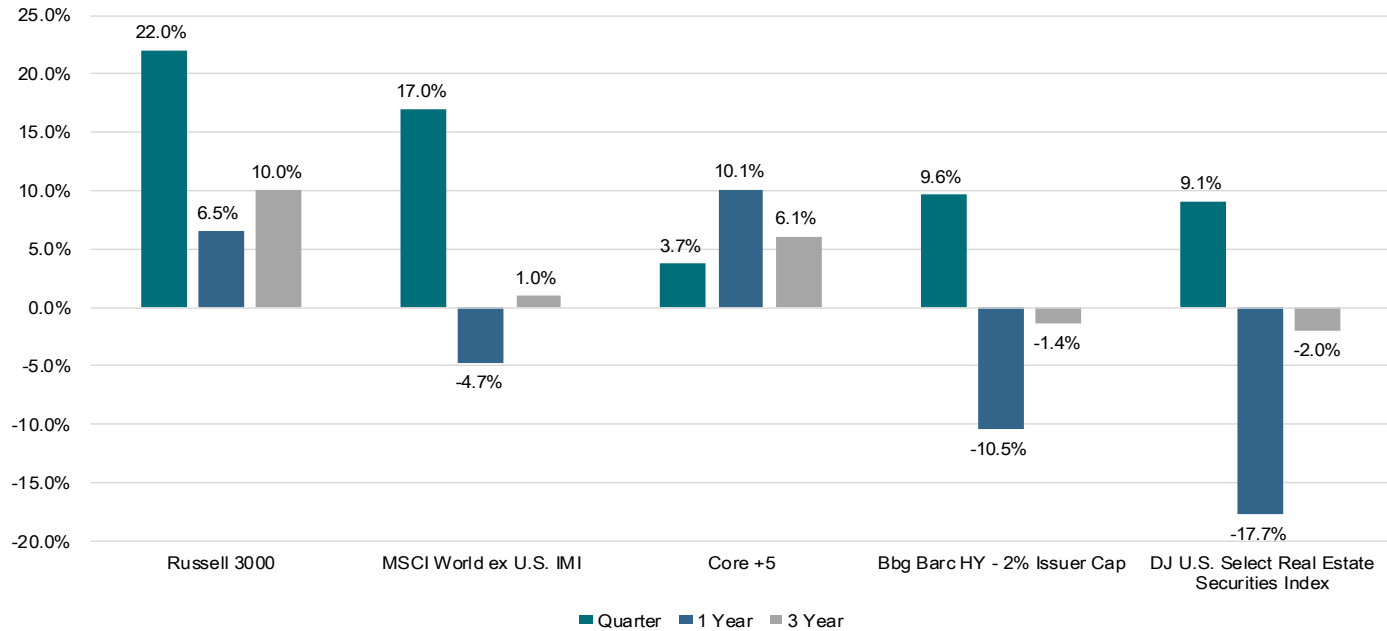
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Through June 30, 2020

Capital Market Performance



Market Backdrop: Aggressive fiscal and monetary policy enacted in countries throughout the world led to generally positive capital markets performance during the second quarter of 2020. U.S. equity markets returned 22.03% (as measured by the Russell 3000 Index), and market volatility declined during the quarter. The Energy sector was one of the top performing sectors for the quarter, rebounding from significant declines during the first quarter of 2020 partly as the result of an oil war between OPEC countries. Developed and emerging equity markets also posted positive second quarter returns. Developed international equity returned 15.57% (MSCI EAFE IMI Net Index in USD terms) during the quarter and emerging markets returned 18.18% (MSCI Emerging Markets Net Index in USD terms) during the same period. U.S. REITs returned 9.11% for the second quarter of 2020, as measured by the DJ U.S. Select Real Estate Securities Index. The broad fixed income market, as proxied by the Bloomberg Barclays Aggregate Bond Index, posted a positive return of 2.90% for the quarter. Below investment grade corporate bonds outperformed investment grade corporate bonds, as the Bloomberg Barclays Corporate Index returned 8.98% and the Bloomberg Barclays High Yield Index returned 10.18% for the quarter.



Through June 30, 2020

Total Fund Performance: The Teachers' Total Fund returned 10.31% (net of fees) for the quarter ending June 30, 2020, underperforming the policy benchmark by 16 basis points. During the quarter, allocations relative to targets detracted 86 bps from the relative performance of the Fund, and manager selection contributed 70 bps. Asset allocation had a positive contribution from US Treasury long duration managers, and the strong results from manager selection was driven largely in part by non-U.S. developed equity and private equity managers. For the one-year period ending June 30, 2020, the Total Fund returned 4.89% net of fees, underperforming the policy benchmark by 28 basis points. For the three-year period ending June 30, 2020, the Total Fund returned 6.84%, net of fees, underperforming its benchmark return of 6.93% by 9 basis points. Please note that all composite and manager performance data in the sections below is reported net of fees. The Total Fund fees for public market assets for the calendar year-to-date ending June 30, 2020 have been estimated at approximately 2 basis points.

- **Total Fund Asset Allocation - \$81.2 Billion:** As of June 30, 2020, the Fund had total assets of \$81.2 billion, up from \$73.7 billion on March 31, 2020. In the Growth segment of the Total Fund, underweights to non-core private real estate of 2.6% and opportunistic fixed income of 2.1% were offset by overweights to domestic equity and REITs, consistent with the strategy to invest in more liquid assets while awaiting private real estate commitments to be drawn down. In the Deflation Protection segment of the Fund, short term investments were 1.6% above long-term targets. Finally, within the Inflation Protection segment of the Fund, core real estate and infrastructure remain about 3.4% below target in aggregate, pending new commitments to and capital calls from private funds. As of June 30, 2020, the total private equity, infrastructure, and private real estate invested allocation was 10.3% versus their aggregate long-term allocation of 18.0%.
- **U.S. Equity - \$22.7 Billion, 28% of Fund:** The U.S. equity composite return of 22.21% outperformed the broad U.S. equity market, represented by the Russell 3000 Index, which returned 22.03% for the quarter. Approximately 95% of the U.S. equity composite is allocated to passively managed mandates. The actively managed portion of the U.S. equity composite, a majority of which was invested in smaller cap strategies, returned 31.41% during the quarter, outperforming the Russell 3000 return by 938 basis points. For the one-year ending June 30, 2020 the U.S. equity composite outperformed the index, returning 6.90% versus the Russell 3000 Index's return of 6.53%. Over the three-year period ending June 30, 2020, the total U.S. equity composite outperformed the Russell 3000 index return of 10.04% by 32 basis points.
- **Developed International Equity - \$8.2 Billion, 10% of Fund:** Non-U.S. developed equity markets, as measured by the World ex-USA Custom Benchmark, returned 16.21% in U.S. dollar terms during the quarter. For the same time-period, the Fund's total developed international equity composite returned 20.88%, outperforming its custom benchmark by 467 basis points. In contrast with the U.S. equity composite, as of June 30, 2020, the developed international equity composite was approximately 80% actively managed. For the one-year period ending June 30, 2020, the overall composite returned 1.48%, outperforming the World ex-USA

Through June 30, 2020

Custom Benchmark return of -5.11% by 658 basis points. Over the three-year period ending June 30, 2020, the total developed international composite outperformed the benchmark return of 0.82% by 346 basis points.

- **Emerging Markets Equity - \$7.9 Billion, 10% of Fund:** Emerging market equities, as measured by the TRS Custom EM Index, returned 18.08% during the second quarter of 2020. During the same time period, the emerging markets equity composite, which is about 70% actively managed, returned 19.49%, outperforming the TRS Custom EM Benchmark. For the one-year period ending June 30, 2020, the emerging markets equity composite returned -7.99%, underperforming the benchmark return of -4.35%. For the three-year period ending June 30, 2020, the emerging markets equity composite returned -0.51%, underperforming the benchmark return by 110 basis points.
- **REITs - \$1.1 Billion, 1% of Fund:** The U.S. REIT market, as measured by the Dow Jones U.S. Select Real Estate Securities Index, returned 9.11% during the second quarter of 2020. The Fund's REITs composite, which is entirely actively managed, outperformed the benchmark by 127 basis points during the quarter, returning 10.38%. For the one-year period ending June 30, 2020, the REIT composite returned -14.65%, outperforming the benchmark return by 305 basis points. Over the three-year period ending June 30, 2020, this composite returned -0.53%, outperforming the index return of -1.99%.
- **Structured Fixed Income - \$18.6 Billion, 23% of Fund:** The structured fixed income composite returned 2.36% during the second quarter of 2020, outperforming the custom structured benchmark return of 2.08% over the same time period. Over the trailing one-year and three-year time periods ending June 30, 2020 the structured fixed income composite returned 14.49% and 7.64%, respectively.
- **High Yield - \$4.0 Billion, 5% of Fund:** The corporate high yield market, as measured by the Bloomberg Barclays U.S. High Yield 2% Issuer Cap Index, returned 10.14% during the second quarter of 2020. The actively managed high yield composite underperformed the benchmark, returning 9.87% over the same time period. For the one-year period ending June 30, 2020, this composite returned 0.36% while the High Yield Custom Benchmark returned 0.00%. Over the three-year period ending June 30, 2020, the composite returned 3.24%, modestly underperforming its custom benchmark by 1 basis point.
- **Bank Loans - \$1.7 Billion, 2% of Fund:** The bank loan composite underperformed the Credit Suisse Leveraged Loan Index during the second quarter of 2020 with the composite returning 7.32% against the benchmark return of 9.71%. For the one-year period ending June 30, 2020, the bank loans composite returned -1.75%, outperforming the Credit Suisse Leveraged Loan Index by 52 basis points. For the three-year period ending June 30, 2020, the bank loans composite underperformed the Credit Suisse Leveraged Loan Index by 25 basis points, returning 1.88%.



Through June 30, 2020

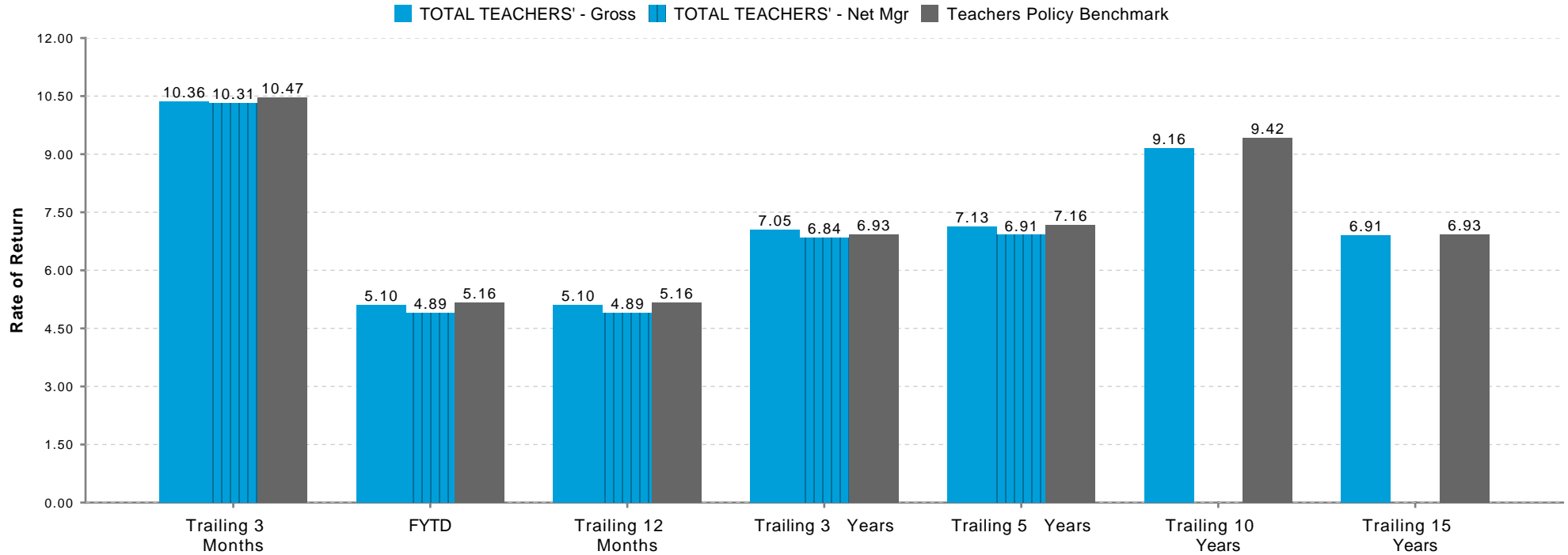
- **TIPS - \$3.2 Billion, 4% of Fund:** The broad U.S. TIPS market returned 4.24% during the second quarter of 2020. The composite of TIPS managers (72% passive/28% active) outperformed the benchmark, returning 4.30% for the quarter. For the one-year period ending June 30, 2020, the TIPS composite returned 8.41% versus its benchmark which returned 8.28%. For the three-year period ending June 30, 2020, the composite returned 5.10% while the benchmark returned 5.05%.
- **Opportunistic Fixed Income - \$2.4 Billion, 3% of Fund:** The opportunistic fixed income composite is comprised of investments in nine funds, representing 18% of this composite's assets, and eleven strategic separate account mandates, representing 82% of composite assets. These strategic mandates and funds call down capital as opportunities are identified and are still in the process of being funded. During the second quarter of 2020, the overall composite returned -4.88% versus the blended benchmark of 50%/50% J.P Morgan Global High Yield Index and Credit Suisse Leveraged Loan Index +3%, which returned 11.06% over the same period. For the one-year period ending June 30, 2020, the overall composite returned -2.29%, underperforming the 0.88% return of the blended benchmark. Over the longer three-year period ending June 30, 2020, the opportunistic fixed income composite returned 3.16% versus the benchmark return of 5.56%.
- **Private Equity - \$4.3 Billion, 5% of Fund:** At the end of the second quarter of 2020, the private equity portfolio had \$4.3 billion in invested capital. The Fund currently has investments in 187 partnerships. Performance is reported separately by Teachers' Private Equity consultant.
- **Private Real Estate - \$3.1 Billion, 4% of Fund:** At the end of the second quarter of 2020, the private real estate portfolio had \$3.1 billion in invested capital. The composite has investments in 76 partnerships. Performance is reported separately by Teachers' Private Real Estate consultant.
- **Private Infrastructure - \$995 Million, 1% of Fund:** At the end of the second quarter of 2020, the private infrastructure portfolio had \$995 million in invested capital. The composite has investments in 19 partnerships and co-invest pools. Performance is reported separately by Teachers' Infrastructure consultant.



Market Value (Billions)

\$81.2

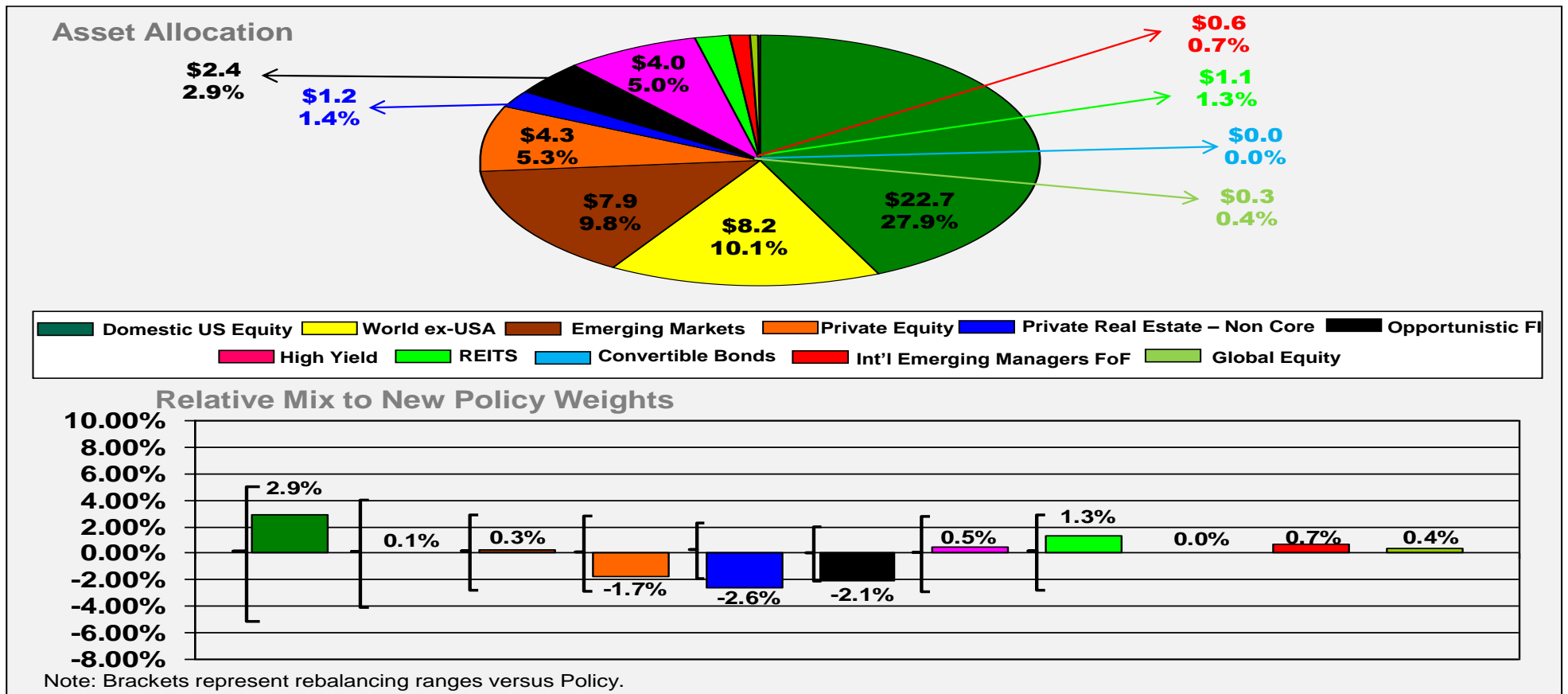
TOTAL TEACHERS'



	Plan 3 Years	Benchmark 3 Years	Plan 5 Years	Benchmark 5 Years	Plan 7 Years	Benchmark 7 Years	Plan 10 Years
Standard Deviation							
TOTAL TEACHERS'	8.5	9.1	7.1	8.2	7.4	7.6	8.0

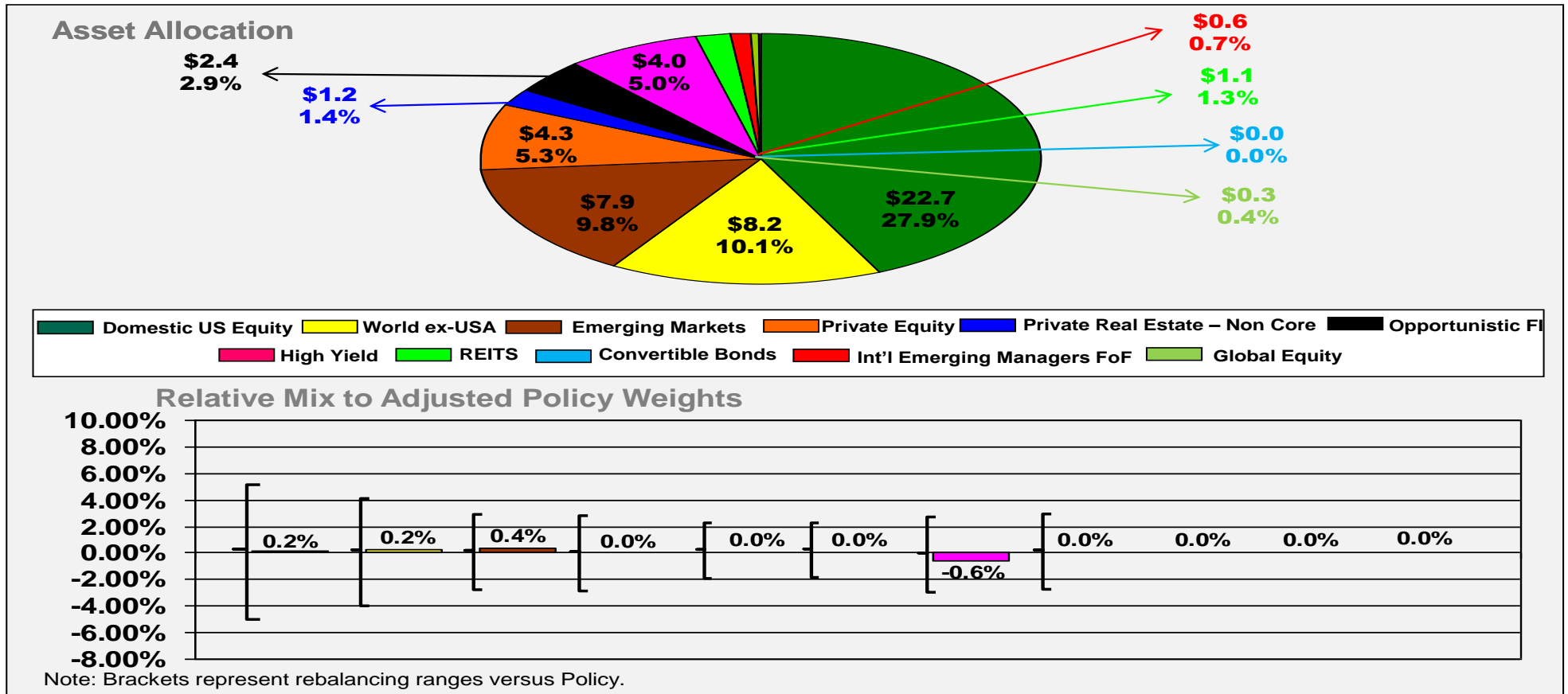


Portfolio Asset Allocation – Growth





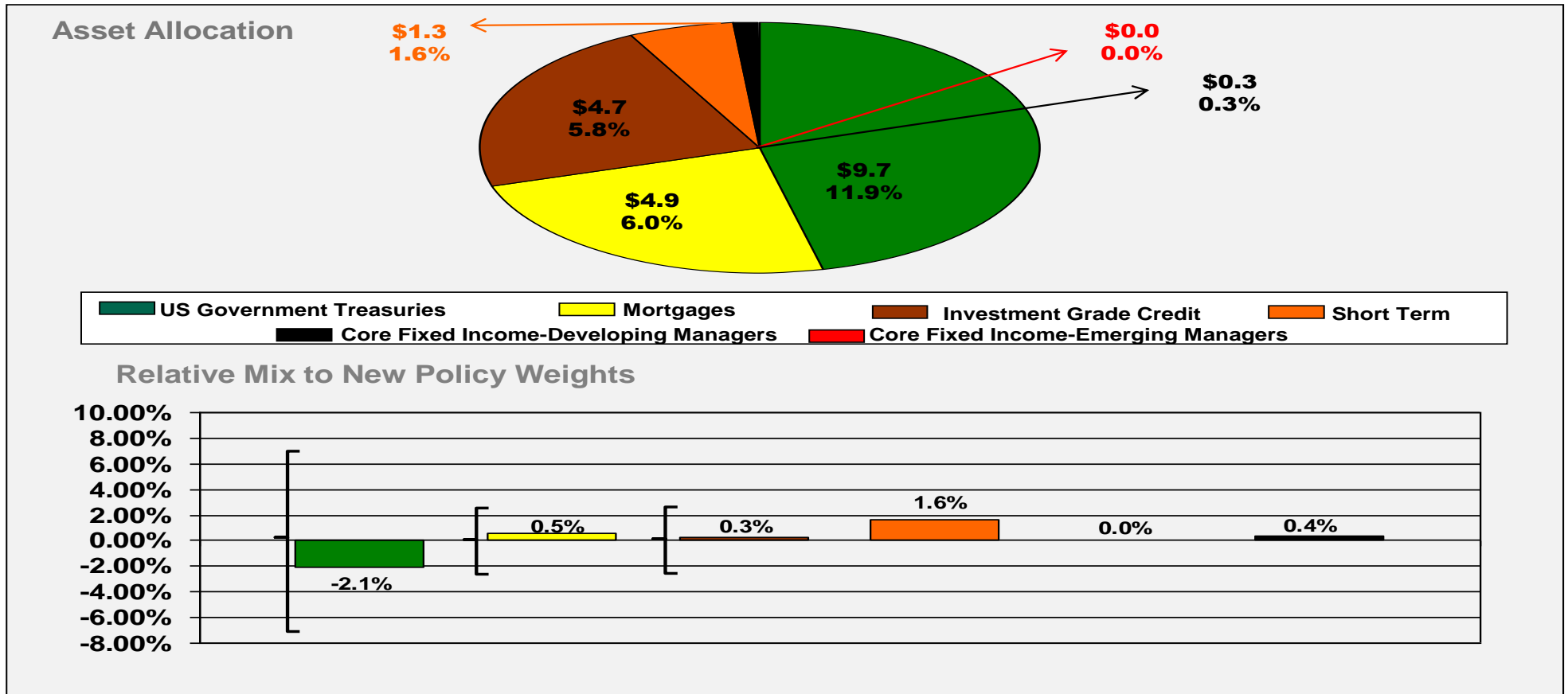
Portfolio Asset Allocation – Growth



Note: On June 30, 2020 TRS' combined Fixed Income and Cash portfolios have a duration of 6.9 years. The duration of the Barclays US Aggregate Index was 6 years on that date.

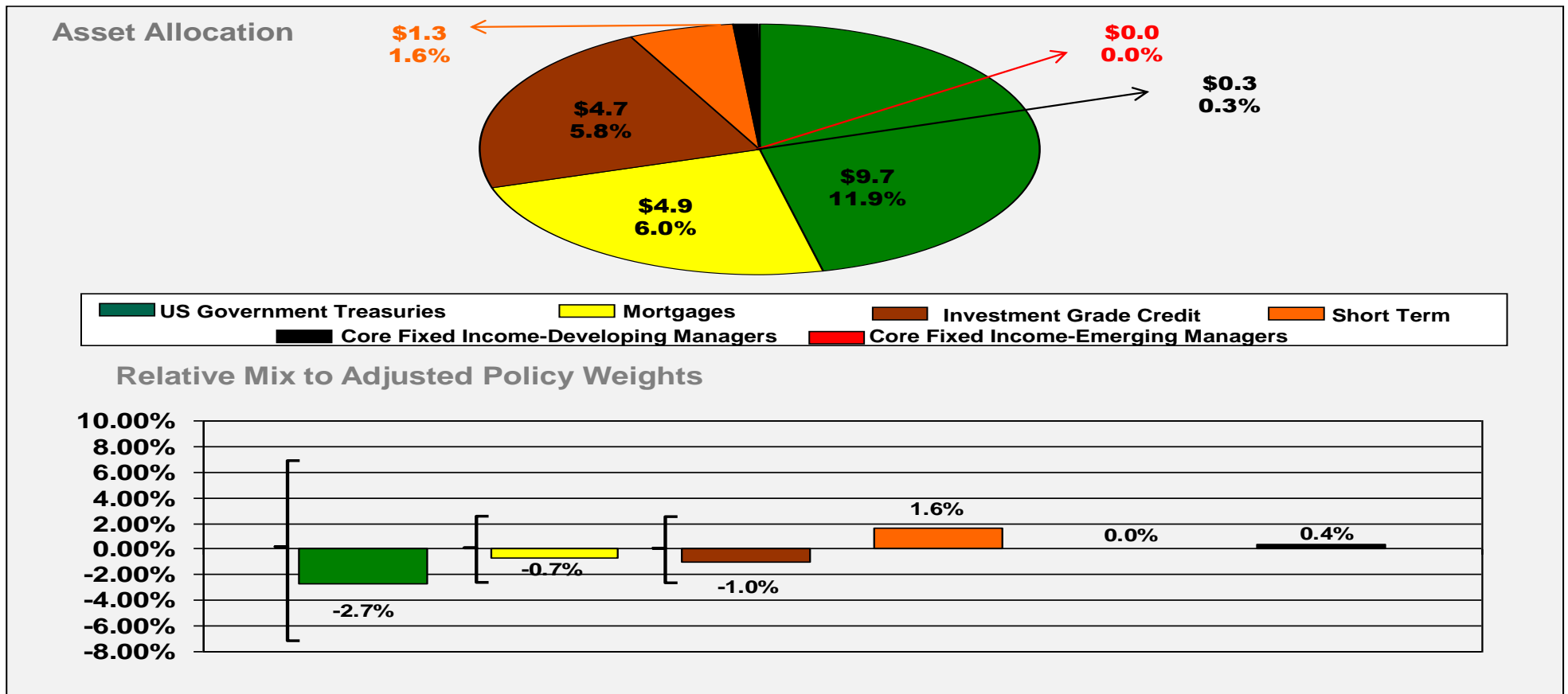


Portfolio Asset Allocation – Deflation Protection





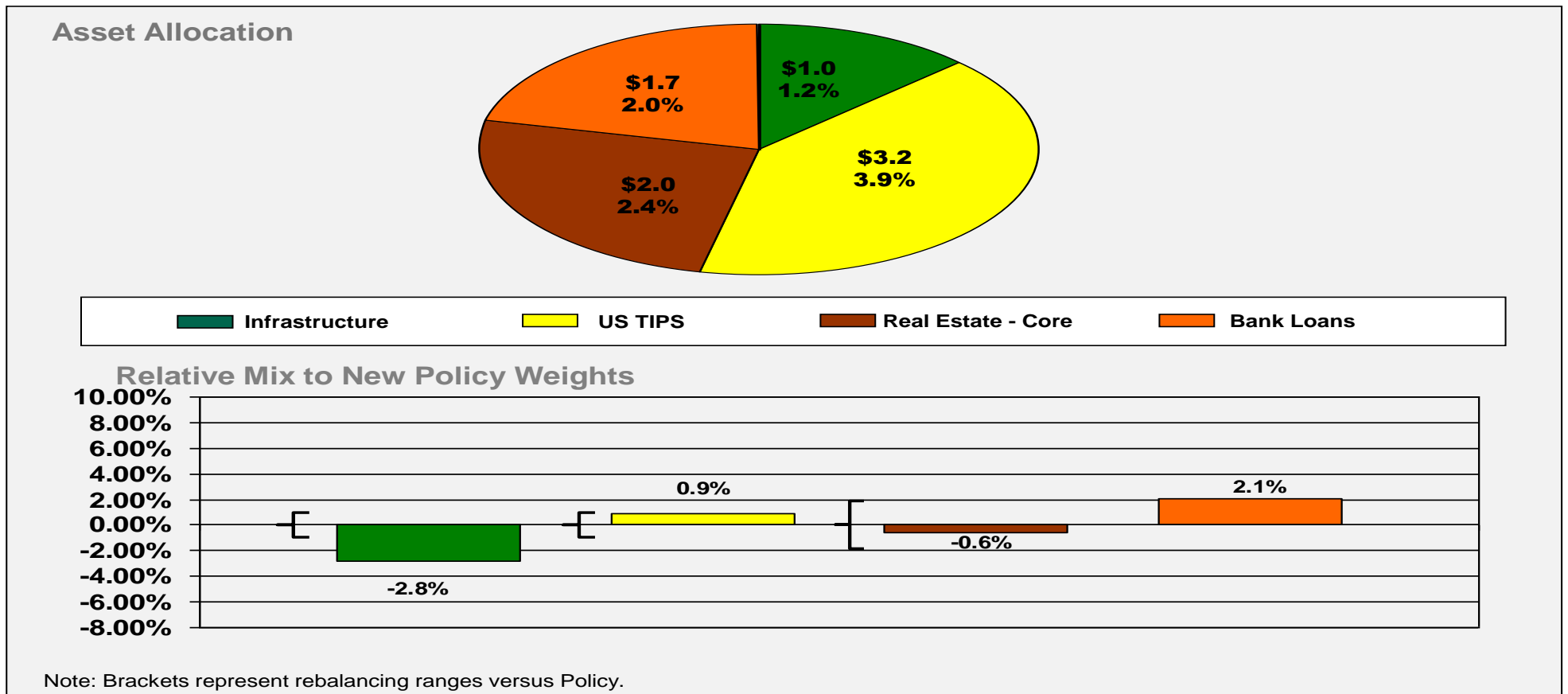
Portfolio Asset Allocation – Deflation Protection



Note: On June 30, 2020 TRS' combined Fixed Income and Cash portfolios have a duration of 6.9 years. The duration of the Barclays US Aggregate Index was 6 years on that date.

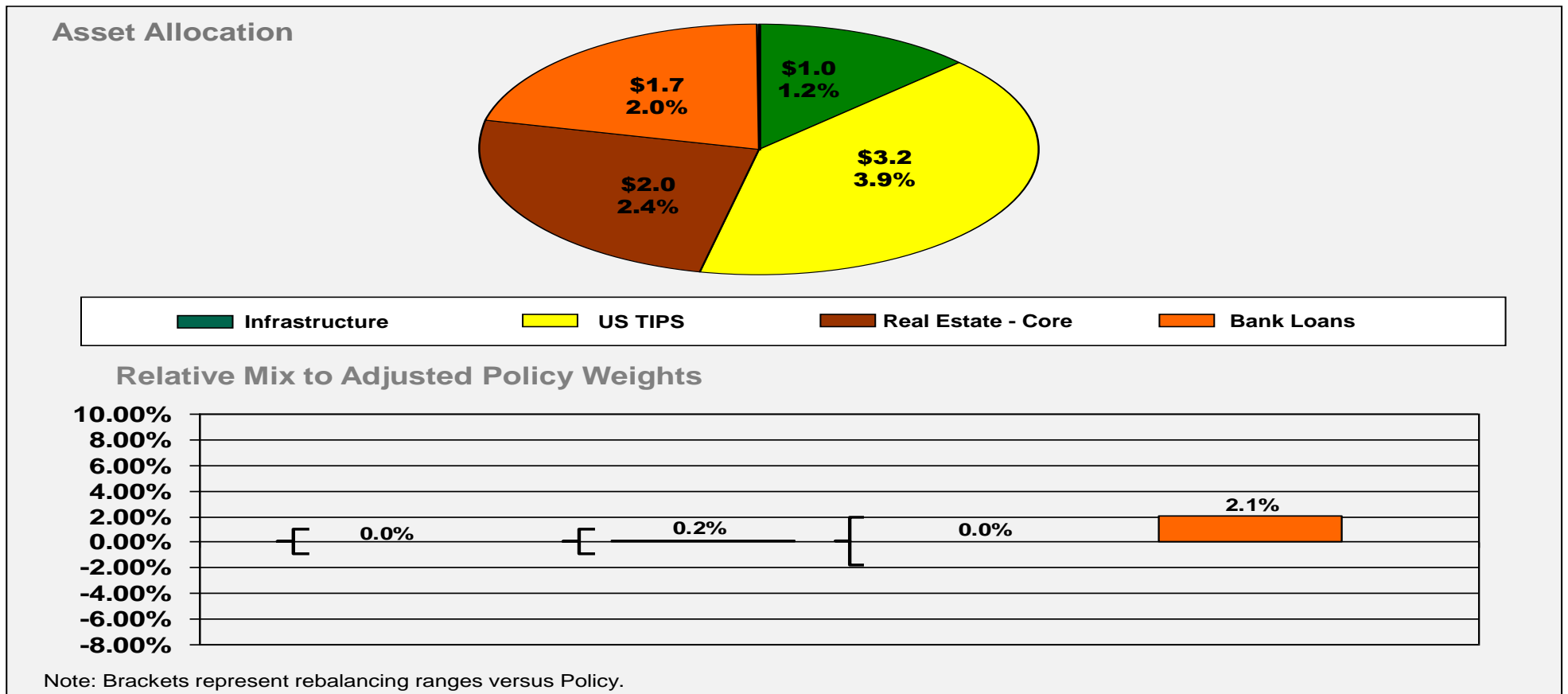


Portfolio Asset Allocation – Inflation Protection

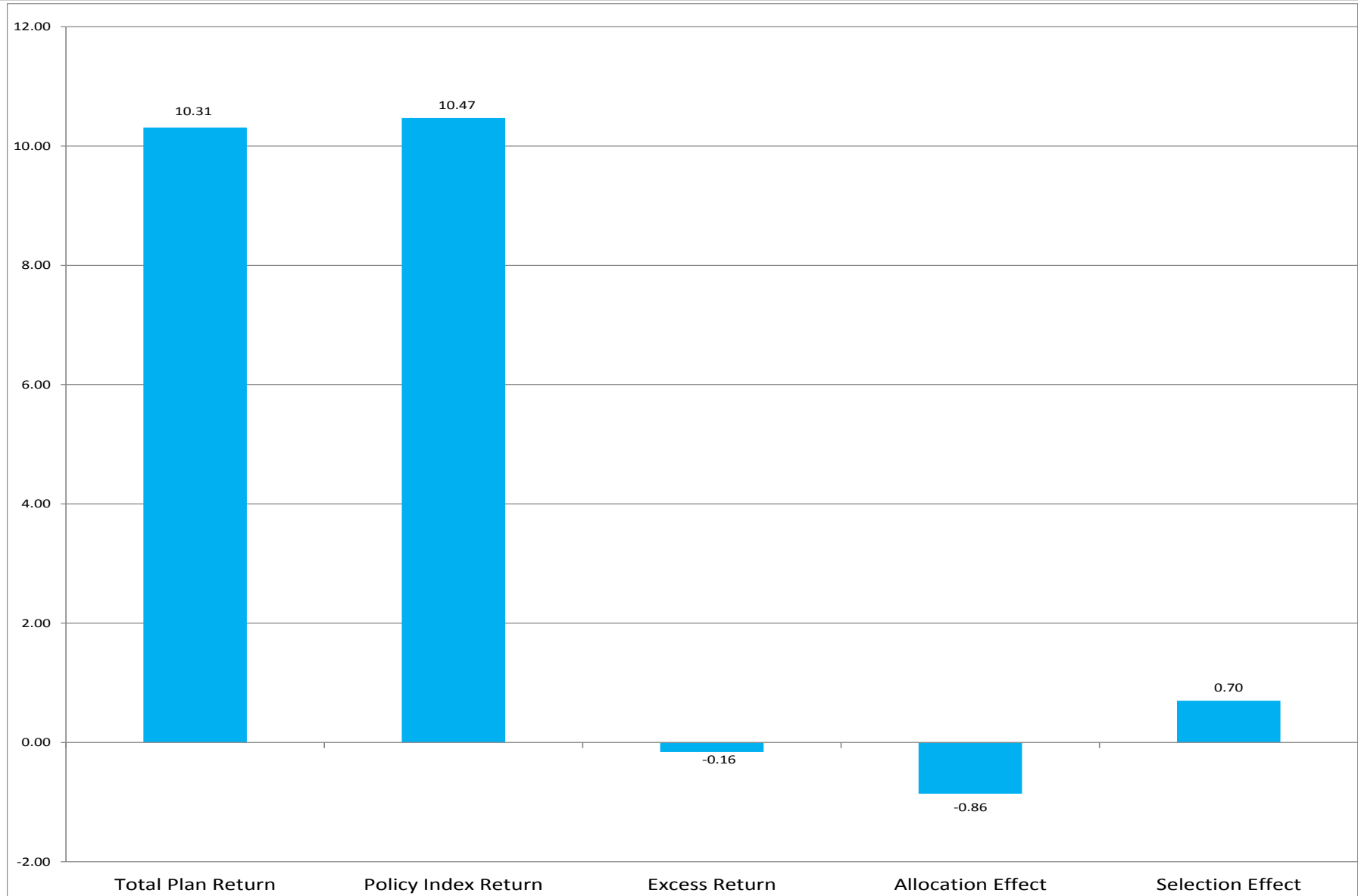


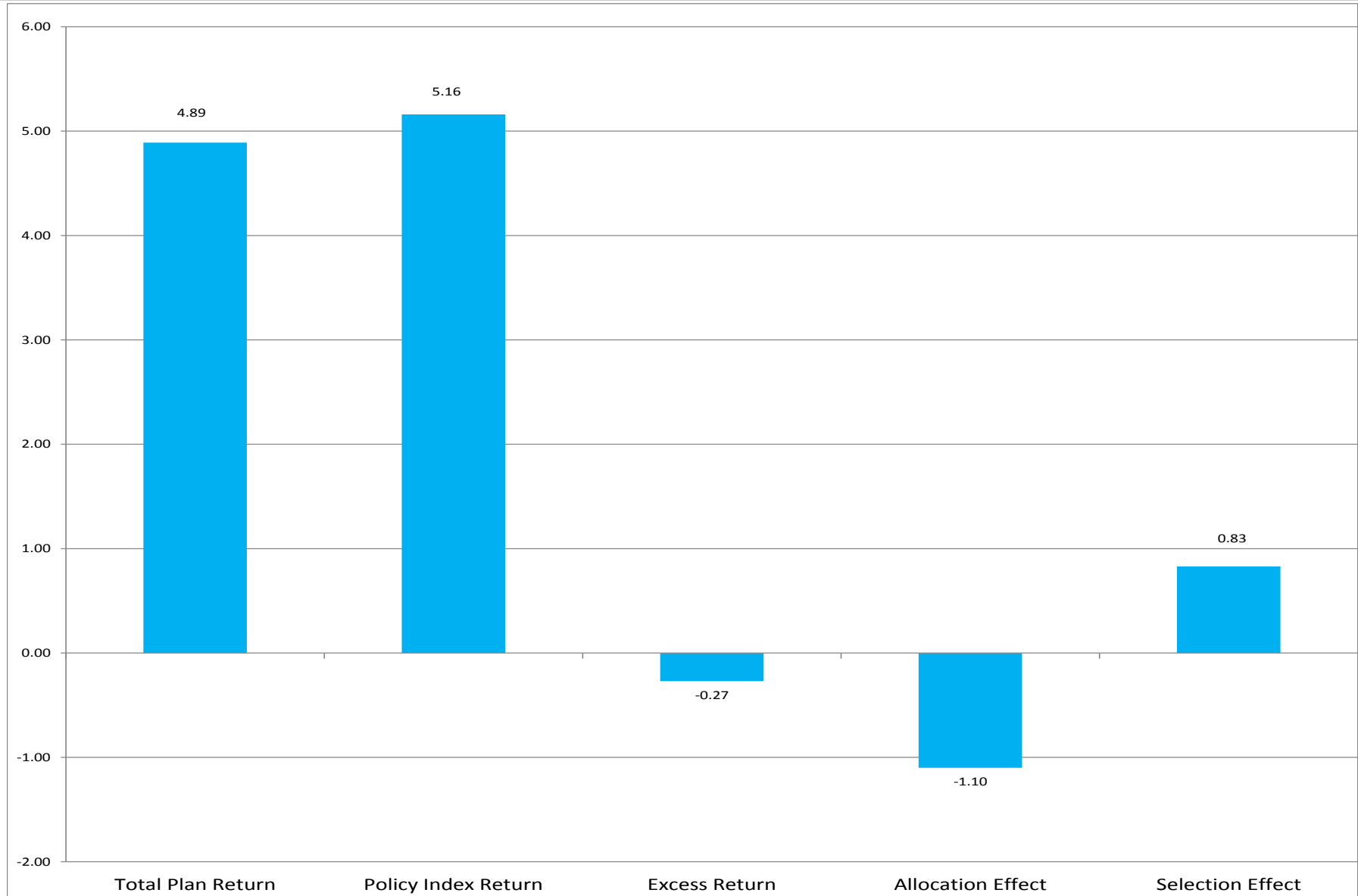


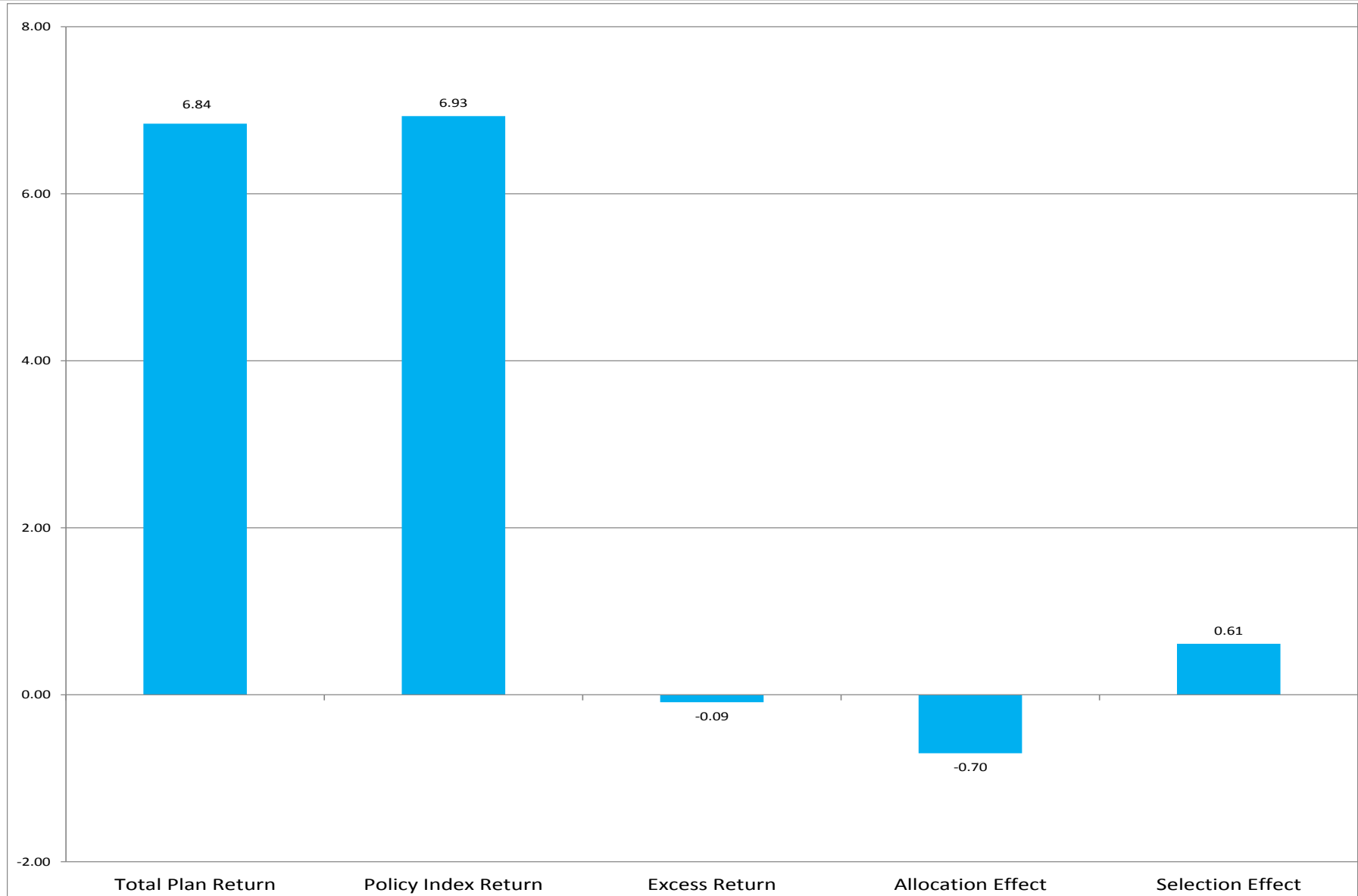
Portfolio Asset Allocation – Inflation Protection



Note: On June 30, 2020 TRS' combined Fixed Income and Cash portfolios have a duration of 6.9 years. The duration of the Barclays US Aggregate Index was 6 years on that date.









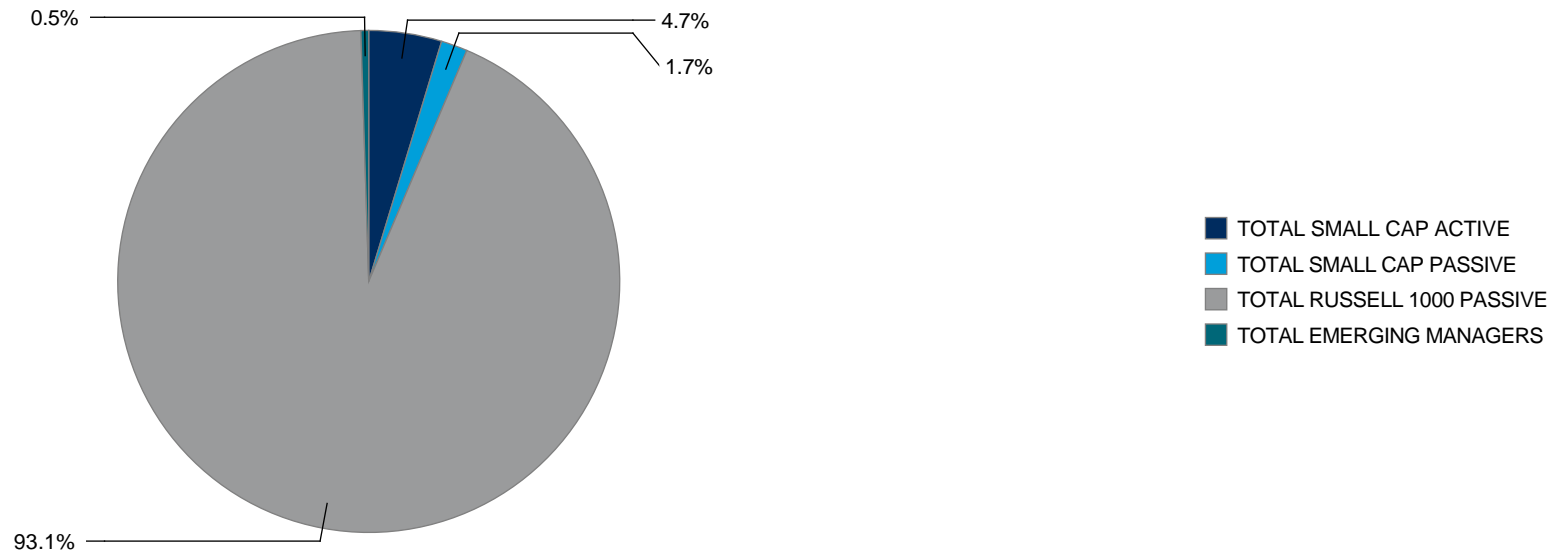
Allocation Effect - Asset Class Breakdown				
	Quarter	FYTD	3 Years	Benchmark
TOTAL TEACHERS'	-0.86	-1.10	-0.70	Teachers Policy Benchmark
TOTAL DOMESTIC EQUITY	-0.40	-0.16	-0.19	RUSSELL 3000
TOTAL WORLD ex-USA	0.01	0.02	0.00	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	0.00	0.00	0.00	MSCI World Index
TOTAL EMERGING MARKETS	-0.02	0.02	-0.02	Teachers Custom EM Index
TOTAL INTERNATIONAL FOF	0.00	0.00	0.00	NYC Blended Custom Benchmark for FoF
TOTAL REAL ESTATE SECURITIES	-0.02	-0.40	-0.17	Dow Jones US Select Securities Index
TOTAL PRIVATE EQUITY	-0.03	-0.12	-0.06	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	0.01	-0.01	0.00	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE - NON CORE	0.00	-0.01	0.00	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	0.01	0.00	0.00	CPI + 4%
TOTAL US TREASURY SHORT TERM	-0.18	0.10	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	-0.42	1.21	0.32	NYC - Treasury Agency Plus Five
TOTAL US TREASURY LONG DURATION	0.38	-1.71	-0.53	FTSE Treasury 10+
TOTAL INVESTMENT GRADE CREDIT	-0.02	-0.07	-0.03	NYC - Investment Grade Credit
TOTAL MORTGAGES	-0.10	-0.03	0.01	FTSE MORTGAGE INDEX
TOTAL ETI	0.00	0.00	0.00	ETI Custom Benchmark
TOTAL CORE FI- DEVELOPING MGRS	-0.02	0.00	0.00	BBG BARC Agg
TOTAL CORE FI- EMERGING MGRS	-0.01	0.01	0.00	BBG BARC Agg
TOTAL HIGH YIELD	0.01	0.07	0.04	High Yield Custom Benchmark
TOTAL BANK LOANS	0.04	0.02	-0.01	Credit Suisse Lev Loan Index
TOTAL TIPS MANAGERS	-0.01	0.00	0.00	BBG BARC Gbl Inf-Lk: US TIPS (Dly)
TOTAL CONVERTIBLE BONDS	0.03	0.03	0.02	ICE BofA All US Conv Ex Mandatory
TOTAL OPPORTUNISTIC FIXED	0.00	0.01	0.00	OFI - JPMGHY / CSFB 50/50 Blend Plus 300
TOTAL CASH	-0.13	-0.08	-0.05	

Selection Effect - Asset Class Breakdown				
	Quarter	FYTD	3 Years	Benchmark
TOTAL TEACHERS'	0.70	0.83	0.61	Teachers Policy Benchmark
TOTAL DOMESTIC EQUITY	0.05	0.11	0.09	RUSSELL 3000
TOTAL WORLD ex-USA	0.47	0.81	0.43	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	-0.01	0.01	0.01	MSCI World Index
TOTAL EMERGING MARKETS	0.12	-0.44	-0.13	Teachers Custom EM Index
TOTAL INTERNATIONAL FOF	0.01	0.01	0.00	NYC Blended Custom Benchmark for FoF
TOTAL REAL ESTATE SECURITIES	0.02	0.06	0.03	Dow Jones US Select Securities Index
TOTAL PRIVATE EQUITY	0.80	0.39	0.17	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	0.03	-0.03	0.02	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE - NON CORE	-0.14	-0.06	-0.01	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	-0.04	0.02	0.05	CPI + 4%
TOTAL US TREASURY SHORT TERM	-0.01	-0.02	-0.01	FTSE USBIG Treasury 1-3 Y Index
TOTAL US TREASURY INTERMEDIATE	0.00	0.00	0.01	FTSE USBIG Treasury/Agency 1-10 y
TOTAL ACTIVE GOVERNMENT	-0.02	0.05	0.01	NYC - Treasury Agency Plus Five
TOTAL US TREASURY LONG DURATION	-0.07	0.00	0.00	FTSE Treasury 10+
TOTAL INVESTMENT GRADE CREDIT	0.09	0.03	0.02	NYC - Investment Grade Credit
TOTAL MORTGAGES	0.05	0.01	0.00	FTSE MORTGAGE INDEX
TOTAL ETI	0.00	0.00	0.00	ETI Custom Benchmark
TOTAL CORE FI- DEVELOPING MGRS	0.01	0.00	0.00	BBG BARC Agg
TOTAL CORE FI- EMERGING MGRS	0.00	0.00	0.00	BBG BARC Agg
TOTAL HIGH YIELD	-0.01	0.02	0.00	High Yield Custom Benchmark
TOTAL BANK LOANS	-0.05	0.02	-0.01	Credit Suisse Lev Loan Index
TOTAL TIPS MANAGERS	0.00	0.01	0.00	BBG BARC Gbl Inf-Lk: US TIPS (Dly)
TOTAL CONVERTIBLE BONDS	-0.03	-0.03	-0.02	ICE BofA All US Conv Ex Mandatory
TOTAL OPPORTUNISTIC FIXED	-0.56	-0.14	-0.08	OFI - JPMGHY / CSFB 50/50 Blend Plus 300
TOTAL CASH	0.00	0.01	0.01	

Total Domestic Equity Asset Allocation: June 30, 2020



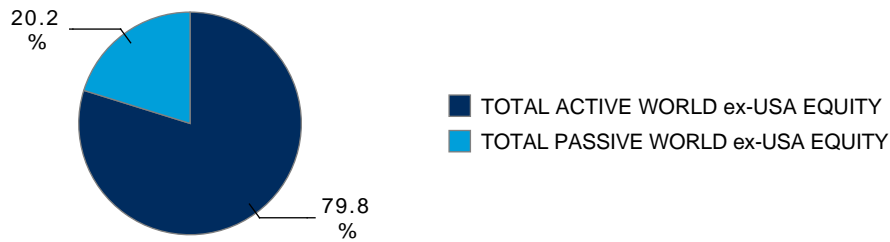
	<u>Market Value (Billions)</u>	<u>% of plan</u>
TOTAL DOMESTIC EQUITY	\$22.7	27.9



	<u>Policy Weight</u>	<u>Actual Weight</u>	<u>Under/Over Weight</u>	<u>Quarterly Returns</u>		
				<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL SMALL CAP ACTIVE	4.5	4.7	0.2	32.1	25.4	6.7
TOTAL SMALL CAP PASSIVE	2.2	1.7	(0.5)	21.4	25.4	(4.0)
TOTAL RUSSELL 1000 PASSIVE	92.7	93.2	0.4	21.8	21.8	(0.1)
TOTAL EMERGING MANAGERS	0.6	0.5	(0.1)	25.0	25.4	(0.5)



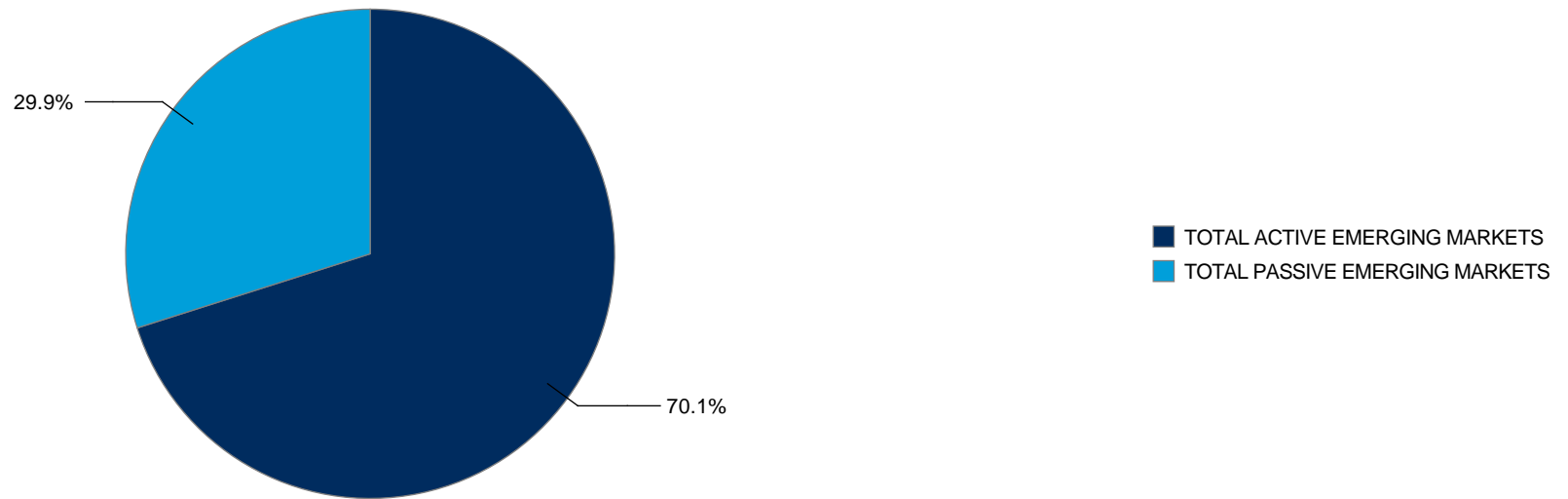
	<u>Market Value (Billions)</u>	<u>% of plan</u>
TOTAL WORLD ex-USA	\$8.2	10.1



	<u>Asset Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL WORLD ex-USA LARGE & MID ACTIVE	71.49	22.17	15.34	6.83
TOTAL WORLD ex-USA SMALL CAP ACTIVE	8.26	20.11	20.83	(0.73)
TOTAL WORLD ex-USA LARGE & MID CAP PASSIVE	14.20	15.94	15.34	0.60
TOTAL WORLD ex-USA SMALL CAP PASSIVE	6.04	22.27	21.66	0.61
TOTAL WORLD ex-USA	100.00	20.88	16.21	4.67



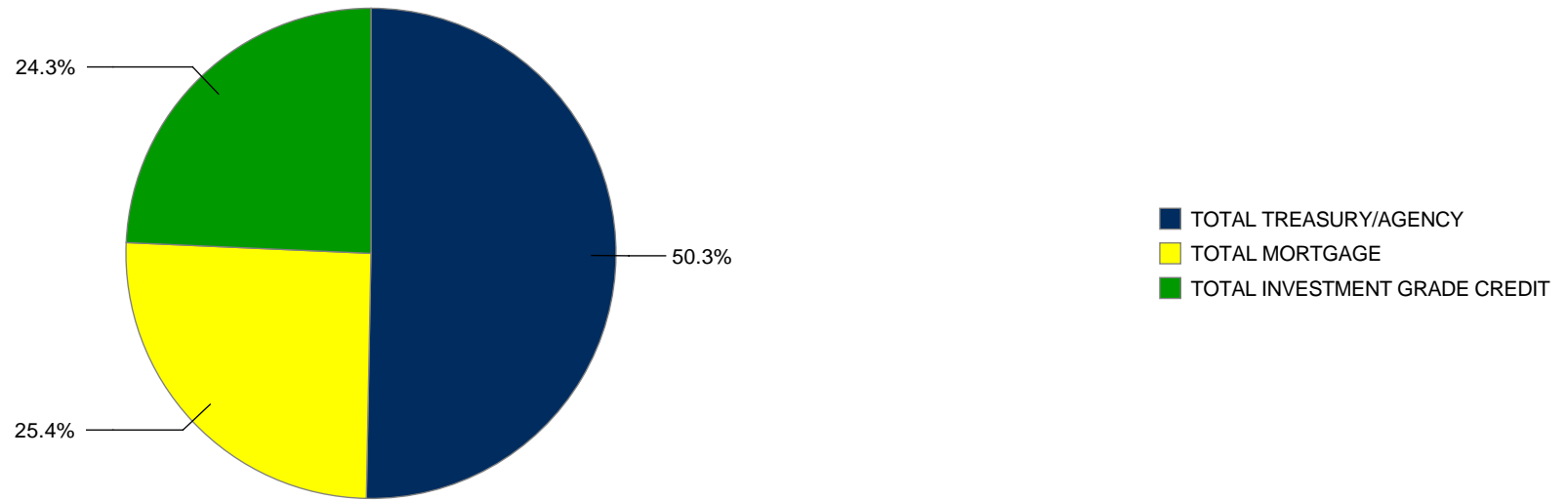
	<u>Market Value (Billions)</u>	<u>% of plan</u>
TOTAL EMERGING MARKETS	\$7.9	9.8



	<u>Asset Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL ACTIVE EMERGING MARKETS	70.14	20.21	18.08	2.13
TOTAL PASSIVE EMERGING MARKETS	29.86	18.03	18.08	(0.05)
TOTAL EMERGING MARKETS	100.00	19.49	18.08	1.41



	<u>Market Value (Billions)</u>	<u>% of plan</u>
TOTAL STRUCTURED + ETI	\$19.3	23.7



	<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 TREASURY/AGENCY	56.00	50.29	(5.71)	(0.09)	0.40	(0.49)
TOTAL MORTGAGE	22.00	25.39	3.39	1.14	0.32	0.82
TOTAL INVESTMENT GRADE CREDIT	22.00	24.32	2.32	9.88	8.28	1.60

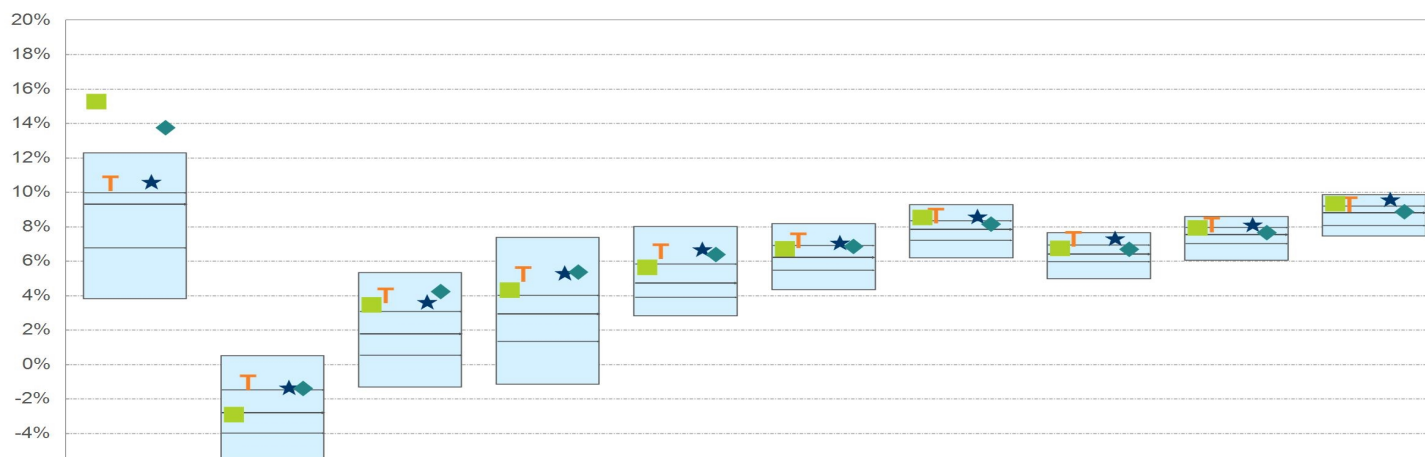


Through June 30, 2020



City of New York Performance Comparison

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



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	12.29	0.52	5.35	7.39	8.02	8.18	9.28	7.66	8.60	9.87
25th	9.98	-1.47	3.09	4.01	5.84	6.91	8.34	6.95	7.96	9.21
50th	9.31	-2.80	1.79	2.95	4.73	6.23	7.85	6.43	7.54	8.83
75th	6.77	-3.99	0.55	1.35	3.92	5.48	7.22	5.97	7.04	8.08
95th	3.84	-5.64	-1.32	-1.14	2.84	4.35	6.21	4.98	6.06	7.46
No. Of Obs	50	50	50	48	47	47	47	47	47	45
T Total System - Teacher	10.36 (17)	-1.19 (21)	3.86 (13)	5.10 (15)	6.42 (13)	7.05 (21)	8.48 (19)	7.13 (21)	7.96 (25)	9.16 (29)
★ Teachers Policy Benchm	10.47 (15)	-1.49 (25)	3.48 (17)	5.16 (13)	6.53 (11)	6.93 (23)	8.44 (21)	7.16 (19)	7.97 (23)	9.42 (15)
■ Public Mkt Equiv 25	15.12 (1)	-3.07 (54)	3.30 (19)	4.17 (23)	5.48 (33)	6.55 (43)	8.38 (23)	6.59 (47)	7.76 (43)	9.19 (25)
◆ Public Mkt Equiv 35	13.60 (1)	-1.56 (25)	4.07 (11)	5.21 (13)	6.22 (13)	6.69 (35)	8.00 (37)	6.54 (47)	7.49 (54)	8.71 (59)

Wilshire Trust Universe Comparison Service® (TUUCS®)

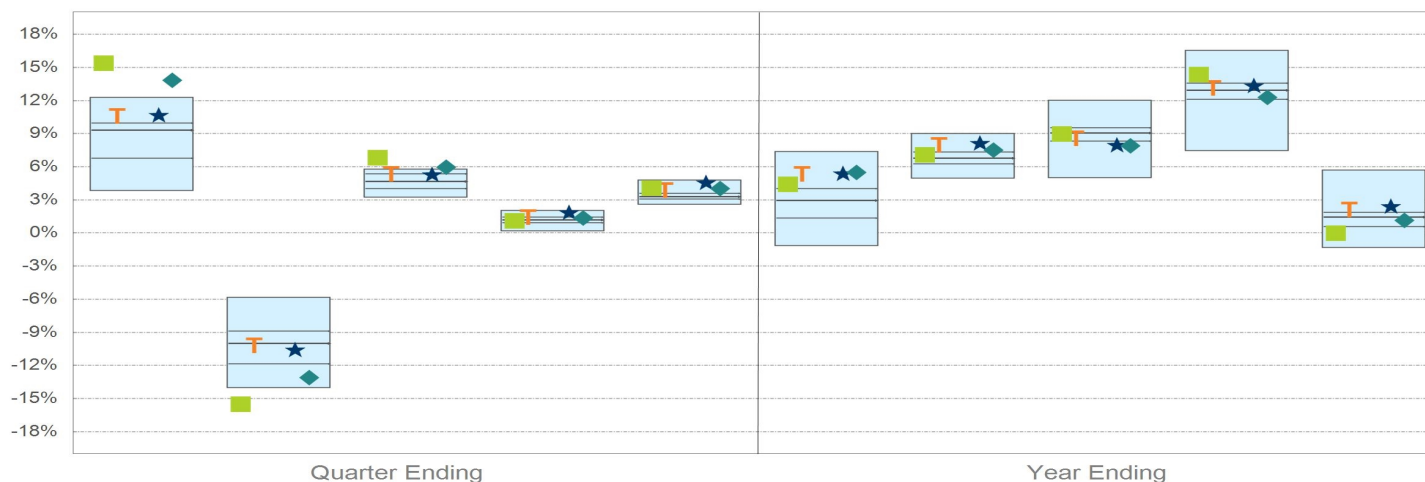


Through June 30, 2020



City of New York Performance Comparison

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



Percentile Rankings	Jun 20	Mar 20	Dec 19	Sep 19	Jun 19	Jun 20	Jun 19	Jun 18	Jun 17	Jun 16
5th	12.29	-5.85	5.81	2.06	4.82	7.39	9.00	12.02	16.54	5.71
25th	9.98	-8.87	5.34	1.44	3.61	4.01	7.36	9.52	13.58	1.86
50th	9.31	-10.00	4.67	1.17	3.28	2.95	6.77	9.05	12.96	1.44
75th	6.77	-11.87	4.03	0.91	3.08	1.35	6.25	8.33	12.13	0.56
95th	3.84	-14.00	3.26	0.21	2.62	-1.14	4.98	5.00	7.49	-1.32
No. Of Obs	50	50	50	48	48	48	48	49	49	49
T Total System - Teacher	10.36 (17)	-10.46 (56)	5.12 (35)	1.19 (45)	3.62 (23)	5.10 (15)	7.75 (17)	8.33 (75)	12.89 (54)	1.86 (27)
★ Teachers Policy Benchm	10.47 (15)	-10.82 (58)	5.04 (35)	1.63 (13)	4.31 (7)	5.16 (13)	7.92 (15)	7.72 (85)	13.09 (39)	2.19 (18)
■ Public Mkt Equiv 25	15.12 (1)	-15.79 (99)	6.57 (1)	0.84 (81)	3.83 (13)	4.17 (23)	6.81 (45)	8.70 (58)	14.09 (14)	-0.30 (83)
◆ Public Mkt Equiv 35	13.60 (1)	-13.35 (87)	5.72 (9)	1.09 (60)	3.77 (15)	5.21 (13)	7.25 (27)	7.64 (85)	12.03 (77)	0.89 (62)

Wilshire Trust Universe Comparison Service® (TUCS®)



**TEACHERS RETIREMENT SYSTEM
INVESTMENT FEES INCURRED FOR FISCAL YEAR ENDED JUNE 30, 2019**

INVESTMENT STYLE (EQUITIES)	Avg. Market Value FY 2019 (\$MM)	Base Mgr. Fees (\$M)	Partnership Expenses (\$M)	Base Mgr. Fees & Partnership Expenses in BPS	Performance / Carry Fees in (\$M)	Performance / Carry Fees in BPS	Total Net All Investment Mgr. Expenses in (\$M)	Total Net All in BPS
Total US Equities	20,635.11	6,151.42	-	2.98	-	-	6,151.42	2.98
Small Cap Active:								
Small Cap Growth	521.43	5,166.38	-	99.08	-	-	5,166.38	99.08
Small Cap Value	521.43	5,166.38	-	99.08	-	-	5,166.38	99.08
Small Cap Core	-	-	-	-	-	-	-	-
Small Cap Fundamental Index	-	-	-	-	-	-	-	-
Mid Cap Active:								
Mid Cap Growth	-	-	-	-	-	-	-	-
Mid Cap Value	-	-	-	-	-	-	-	-
Mid Cap Core	-	-	-	-	-	-	-	-
Russell 1000 Fundamental	-	-	-	-	-	-	-	-
Legato (Emerging Manager- Equity)	114.41	568.94	-	49.73	-	-	568.94	49.73
U.S. Environmental Managers	-	-	-	-	-	-	-	-
Total US Active Equities	635.83	5,735.32	-	90.20	-	-	5,735.32	90.20
Small Cap Passive:								
Small Cap Passive	941.18	39.75	-	0.42	-	-	39.75	0.42
Mid Cap Passive:								
Mid Cap Passive	-	-	-	-	-	-	-	-
Russell / S&P Passive:								
Russell 1000 Growth Passive	-	-	-	-	-	-	-	-
Russell 1000 Value Passive	-	-	-	-	-	-	-	-
Russell 1000 Core Passive	19,058.09	376.34	-	0.20	-	-	376.34	0.20
Passive Russell 3000	-	-	-	-	-	-	-	-
Passive S&P 500	-	-	-	-	-	-	-	-
Passive Russell Top 200	-	-	-	-	-	-	-	-
Total US Passive Equities	19,999.27	416.10	-	0.21	-	-	416.10	0.21



**TEACHERS RETIREMENT SYSTEM
INVESTMENT FEES INCURRED FOR FISCAL YEAR ENDED JUNE 30, 2019**

	Avg. Market Value FY 2019 (\$MM)	Base Mgr. Fees (\$M)	Partnership Expenses (\$M)	Base Mgr. Fees & Partnership Expenses in BPS	Performance / Carry Fees in (\$M)	Performance / Carry Fees in BPS	Total Net All Investment Mgr. Expenses in (\$M)	Total Net All in BPS
Total International Equities	15,374.93	41,980.70	-	27.30	-	-	41,980.70	27.30
Global Equity	254.93	1,392.17	-	54.61	-	-	1,392.17	54.61
Active Total Global Equities	254.93	1,392.17	-	54.61	-	-	1,392.17	54.61
Active Total World Ex USA:	6,272.40	18,456.97	-	29.43	-	-	18,456.97	29.43
World Ex-USA Large & Mid Active	5,525.68	15,279.14	-	27.65	-	-	15,279.14	27.65
World Ex-USA Small Cap Active	746.56	3,177.83	-	42.57	-	-	3,177.83	42.57
Total World Ex USA	0.16	-	-	-	-	-	-	-
Total Progress Intl.	-	-	-	-	-	-	-	-
NON-U.S. Activist	-	-	-	-	-	-	-	-
NON-U.S. Environmental Managers	-	-	-	-	-	-	-	-
Active Emerging Markets	4,601.80	20,130.83	-	43.75	-	-	20,130.83	43.75
International Fund of Funds	514.09	2,429.70	-	47.26	-	-	2,429.70	47.26
Total Active International Equities	11,388.29	41,017.50	-	36.02	-	-	41,017.50	36.02
Int'l Passive Equities:								
World Ex-USA Small Cap Passive	548.86	271.26	-	4.94	-	-	271.26	4.94
World Ex-USA Large & Mid Cap Passive	1,555.43	178.61	-	1.15	-	-	178.61	1.15
Passive Global	-	-	-	-	-	-	-	-
Passive Emerging Markets	1,882.35	513.33	-	2.73	-	-	513.33	2.73
Total Int'l Passive Equities	3,986.64	963.19	-	2.42	-	-	963.19	2.42
REITS Active Equities	1,174.41	4,873	-	41.49	-	-	4,873	41.49
Total Equities	37,439.37	54,397.34	-	14.53	-	-	54,397.34	14.53



**TEACHERS RETIREMENT SYSTEM
INVESTMENT FEES INCURRED FOR FISCAL YEAR ENDED JUNE 30, 2019**

INVESTMENT STYLE (FIXED INCOME)	Avg. Market Value FY 2019 (\$MM)	Base Mgr. Fees (\$M)	Partnership Expenses (\$M)	Base Mgr. Fees & Partnership Expenses in BPS	Performance / Carry Fees in (\$M)	Performance / Carry Fees in BPS	Total Net All Investment Mgr. Expenses in (\$M)	Total Net All in BPS
Total Fixed Income	28,182.35	26,530.74	-	9.41	-	-	26,530.74	9.41
Structured Program:	16,436.18	6,781.10	-	4.13	-	-	6,781.10	4.13
Government Treas/Agency Sector	7,774.97	2,017.50	-	2.59	-	-	2,017.50	2.59
Long Duration Treasury	2,952.32	293.03	-	0.99	-	-	293.03	0.99
Mortgage Sector	2,597.86	1,319.98	-	5.08	-	-	1,319.98	5.08
Investment Grade Credit Sector	3,111.03	3,150.59	-	10.13	-	-	3,150.59	10.13
Developing Managers	124.41	234.24	-	18.83	-	-	234.24	18.83
Emerging Managers	125.12	426.33	-	34.07	-	-	426.33	34.07
TIPS:	4,450.36	549.26	-	1.23	-	-	549.26	1.23
Active TIPS Managers	783.85	431.95	-	5.51	-	-	431.95	5.51
Passive TIPS Managers	3,666.50	117.32	-	0.32	-	-	117.32	0.32
High Yield	3,598.88	10,783.42	-	29.96	-	-	10,783.42	29.96
Bank Loans	2,109.93	5,638.02	-	26.72	-	-	5,638.02	26.72
Convertible Bonds	196.48	737.89	-	37.55	-	-	737.89	37.55
ETI - Access - RBC	145.76	266.85	-	18.31	-	-	266.85	18.31
ETI - AFL-CIO HIT	287.01	1,113.62	-	38.80	-	-	1,113.62	38.80
Other ETI Programs	198.12	-	-	-	-	-	-	-
Short Term (Internal)	510.10	-	-	-	-	-	-	-
Total Public Markets	65,621.72	80,928.08	-	12.33	-	-	80,928.08	12.33



**TEACHERS RETIREMENT SYSTEM
INVESTMENT FEES INCURRED FOR FISCAL YEAR ENDED JUNE 30, 2019**

INVESTMENT STYLE (PRIVATE MARKETS)	Avg. Market Value FY 2019 (\$MM)	Base Mgr. Fees (\$M)	Partnership Expenses (\$M)	Base Mgr. Fees & Partnership Expenses in BPS	Performance / Carry Fees in (\$M)	Performance / Carry Fees in BPS	Total Net All Investment Mgr. Expenses in (\$M)	Total Net All in BPS
Hedge Funds	-	-	-	-	-	-	-	-
Private Equity	4,137.55	56,959.14	13,456.10	170.19	68,472.90	165.49	138,888.14	335.68
Private Real Estate	2,788.86	26,194.96	10,695.38	132.28	8,170.62	29.30	45,060.96	161.57
Infrastructure	806.19	12,892.56	2,661.86	96.85	3,307.31	41.02	18,861.74	117.45
Opportunistic Fixed Income	1,957.70	18,320.01	7,568.91	132.24	3,305.08	16.88	29,194.00	149.12
Total Private Markets	9,690.30	114,366.66	34,382.26	153.50	83,255.91	85.92	232,004.83	239.42
Total Overall	75,312.02	195,294.74	34,382.26	30.50	83,255.91	11.05	312,932.91	41.55

The overall carried interest and incentive fees paid by TRS in Fiscal Year : 11.05 BPS

General Footnotes:

- 1) Private Markets expense data is restricted to the partnerships that have provided expense templates. In the event where there is no expense data, financial statements are prorated for each of the participants of the LP and/or adjusted for cash flows as reported by our custodian bank for carried interest realized.
- 2) Infrastructure's expense data is based off the total committed amounts rather than current market value due to its early fund life juncture.



**NYC TEACHERS' RETIREMENT SYSTEM
SECURITIES LENDING INCOME
June 30, 2020**

	U. S. FIXED INCOME	U. S. EQUITY	INTERNATIONAL EQUITY	TOTAL
1989	1,185,000	-	-	1,185,000
1990	885,000	-	-	885,000
1991	898,000	-	-	898,000
1992	1,692,000	193,000	300,000	2,185,000
1993	3,701,000	694,000	508,000	4,903,000
1994	4,314,000	1,360,000	696,000	6,370,000
1995	3,395,000	1,621,000	520,000	5,536,000
1996	2,874,000	1,738,000	879,000	5,491,000
1997	2,943,000	3,430,000	1,158,000	7,531,000
1998	4,793,000	4,549,000	1,499,000	10,841,000
1999	4,329,000	4,830,000	1,772,000	10,931,000
2000	4,282,000	4,963,000	2,300,000	11,545,000
2001	7,435,000	6,744,000	3,489,000	17,668,000
2002	4,401,000	5,578,000	2,530,000	12,509,000
2003	2,156,000	3,467,000	2,662,000	8,285,000
2004	2,949,000	4,413,000	2,550,000	9,912,000
2005	4,427,000	6,136,000	3,201,000	13,764,000
2006	4,282,000	9,789,000	2,868,000	16,939,000
2007	9,618,000	15,962,000	3,088,000	28,668,000
2008	27,299,000	27,400,000	5,129,000	59,828,000
2009	10,039,000	17,682,000	3,834,000	31,555,000
2010	4,271,000	11,122,000	3,200,000	18,593,000
2011	5,880,000	15,051,000	6,082,000	27,013,000
2012	8,113,000	18,853,000	4,915,000	31,881,000
2013	5,208,000	21,196,000	3,803,000	30,207,000
2014	2,195,000	9,191,000	6,079,000	17,465,000
2015	2,510,000	6,924,000	7,135,000	16,569,000
2016	2,861,000	10,325,000	5,376,000	18,562,000
2017	3,776,000	5,982,000	4,196,000	13,954,000
2018	3,302,655	3,899,058	6,252,432	13,454,145
2019	2,001,733	3,549,667	5,098,539	10,649,939
2020 (6 months)	871,725	1,487,424	2,260,464	4,619,613
Since Inception	<u>148,887,113</u>	<u>228,129,148</u>	<u>93,380,436</u>	<u>470,396,697</u>



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

Appendix A

Consolidated Performance Report

Consolidated Performance Report



Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	FYE 2019	2019	2018	2017	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
SYSTEM RETURN SUMMARY															
5 TRS-TOTAL PORTFOLIO - GROSS	81,231	100.00	10.36	5.10	(1.19)	7.76	18.63	(3.00)	16.74	5.10	7.05	7.13	9.16	8.40	07/01/1987
TRS - ESTIMATED INVESTMENT FEES			(0.05)	(0.22)	(0.09)	(0.21)	(0.26)	(0.17)	(0.25)	(0.22)	(0.21)	(0.22)			
EST MANAGEMENT FEES - PUBLIC MARKET (ACCRUAL)			(0.03)	(0.11)	(0.03)	(0.11)	(0.11)	(0.11)	(0.13)	(0.11)	(0.11)	(0.12)			
EST MANAGEMENT FEES - ALTERNATIVE MARKETS (CASH)			(0.02)	(0.11)	(0.06)	(0.10)	(0.15)	(0.06)	(0.12)	(0.11)	(0.10)	(0.10)			
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
TRS-TOTAL PORTFOLIO - NET MGR			10.31	4.89	(1.28)	7.54	18.38	(3.18)	16.49	4.89	6.84	6.91			
TRS POLICY BENCHMARK			10.47	5.16	(1.48)	7.92	19.30	(3.41)	16.67	5.16	6.93	7.16	9.42		
EXCESS RETURN			(0.16)	(0.28)	0.20	(0.38)	(0.93)	0.23	(0.18)	(0.28)	(0.09)	(0.25)	(0.27)		
EQUITY RETURN SUMMARY															
18 TRS-TOTAL EQUITY (INCLUDES ALTERNATIVES & REITS) - GROSS	49,136	60.49	15.57	2.51	(5.43)	7.59	24.09	(5.19)	23.48	2.51	7.32	8.04	11.04	7.63	04/01/2004
ESTIMATED INVESTMENT FEES			(0.07)	(0.27)	(0.11)	(0.28)	(0.35)	(0.21)	(0.33)	(0.27)	(0.27)	(0.27)			
EST MANAGEMENT FEES			(0.07)	(0.27)	(0.11)	(0.28)	(0.35)	(0.21)	(0.33)	(0.27)	(0.27)	(0.27)			
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
TRS-TOTAL EQUITY (INCLUDES ALTERNATIVES & REITS) - NET MGR			15.50	2.23	(5.55)	7.31	23.74	(5.40)	23.15	2.23	7.05	7.77			
26 TRS-TOTAL EQUITY - GROSS	39,662	48.83	21.40	3.01	(5.53)	6.37	27.22	(8.96)	25.72	3.01	6.99	7.74	10.89		12/01/1990
ESTIMATED INVESTMENT FEES			(0.04)	(0.14)	(0.06)	(0.15)	(0.17)	(0.12)	(0.18)	(0.14)	(0.15)	(0.15)			
EST MANAGEMENT FEES			(0.04)	(0.14)	(0.06)	(0.15)	(0.17)	(0.12)	(0.18)	(0.14)	(0.15)	(0.15)			
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
TRS-TOTAL EQUITY - NET MGR			21.36	2.87	(5.59)	6.23	27.05	(9.08)	25.54	2.87	6.85	7.60			
34 TRS-TOTAL DOMESTIC EQUITY - GROSS	22,657	27.89	22.22	6.94	(2.95)	9.34	31.01	(4.87)	21.26	6.94	10.40	10.26	13.79	10.37	12/01/1990
ESTIMATED INVESTMENT FEES			(0.01)	(0.04)	(0.02)	(0.03)	(0.04)	(0.03)	(0.03)	(0.04)	(0.03)	(0.04)			
TRS-TOTAL DOMESTIC EQUITY - NET MGR			22.21	6.90	(2.97)	9.31	30.98	(4.89)	21.22	6.90	10.36	10.22			
RUSSELL 3000 (DAILY)			22.03	6.53	(3.48)	8.98	31.02	(5.24)	21.13	6.53	10.04	10.03	13.72	10.35	
EXCESS RETURN			0.18	0.37	0.51	0.33	(0.04)	0.35	0.09	0.37	0.32	0.19	0.07	0.01	
44 TRS-TOTAL SMALL CAP - GROSS	1,440	1.77	29.04	(0.65)	(5.72)	0.75	26.55	(6.38)	19.45	(0.65)	6.93	8.76	15.31	16.54	05/01/2009
ESTIMATED INVESTMENT FEES			(0.18)	(0.44)	(0.24)	(0.36)	(0.46)	(0.34)	(0.47)	(0.44)	(0.42)	(0.44)			
TRS-TOTAL SMALL CAP - NET MGR			28.86	(1.09)	(5.96)	0.40	26.08	(6.72)	18.98	(1.09)	6.51	8.32			
RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	(3.31)	25.52	(11.01)	14.65	(6.63)	2.01	4.29	10.50	11.72	
EXCESS RETURN			3.45	5.53	7.02	3.71	0.56	4.30	4.33	5.53	4.50	4.04	4.81	4.82	
54 TRS-TOTAL RUSSELL 1000 - GROSS	21,110	25.99	21.77	7.56	(2.73)	10.12	31.38			7.56			9.54	04/01/2018	
ESTIMATED INVESTMENT FEES			(0.00)	(0.00)	(0.00)	(0.00)	(0.00)			(0.00)			(0.00)		
TRS-TOTAL RUSSELL 1000 - NET MGR			21.77	7.55	(2.73)	10.11	31.38			7.55			9.54		
RUSSELL 1000 (DAILY)			21.82	7.48	(2.81)	10.02	31.43			7.48			9.43		
EXCESS RETURN			(0.06)	0.07	0.08	0.09	(0.05)			0.07			0.11		

Consolidated Performance Report



Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	FYE 2019	2019	2018	2017	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date	
EQUITY RETURN SUMMARY																
66	TRS-TOTAL EMERGING MANAGER - GROSS	107	0.13	25.12	(7.76)	(13.03)	0.49	24.01	(7.78)	(7.76)	2.21			2.30	05/01/2017	
	ESTIMATED INVESTMENT FEES			(0.15)	(0.46)	(0.21)	(0.50)	(0.62)	(0.46)	(0.46)	(0.51)			(0.52)		
	TRS-TOTAL EMERGING MANAGER - NET MGR			24.96	(8.21)	(13.24)	(0.01)	23.40	(8.24)	(8.21)	1.70			1.79		
	RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	(3.31)	25.52	(11.01)	(6.63)	2.01			2.33		
	EXCESS RETURN			(0.45)	(1.59)	(0.26)	3.30	(2.13)	2.77	(1.59)	(0.30)			(0.55)		
76	TRS-TOTAL WORLD ex-USA - GROSS	8,174	10.06	20.95	1.70	(6.34)	0.22	26.33	(14.26)	29.77	1.70	4.52	5.09	7.74	6.37	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.07)	(0.22)	(0.10)	(0.23)	(0.28)	(0.20)	(0.28)	(0.22)	(0.24)	(0.25)			
	TRS-TOTAL WORLD ex-USA - NET MGR			20.88	1.48	(6.45)	(0.01)	26.05	(14.45)	29.49	1.48	4.28	4.84			
	WORLD EX-USA CUSTOM BM			16.21	(5.11)	(11.68)	0.16	22.91	(14.68)	26.40	(5.11)	0.82	2.32	6.03	4.87	
	EXCESS RETURN			4.67	6.58	5.24	(0.17)	3.15	0.23	3.09	6.58	3.46	2.52	1.71	1.50	
86	TRS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - GROSS	5,843	7.19	22.25	4.55	(3.88)	1.41	27.98	(13.53)	30.68	4.55	6.34	6.06	4.91	11/01/2013	
	ESTIMATED INVESTMENT FEES			(0.08)	(0.29)	(0.13)	(0.28)	(0.35)	(0.24)	(0.36)	(0.29)	(0.29)	(0.29)	(0.29)		
	TRS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - NET MGR			22.17	4.26	(4.01)	1.13	27.62	(13.77)	30.32	4.26	6.04	5.76	4.62		
	NYC CUSTOM WORLD EX-USA LG & MID ACT INDEX			15.34	(5.42)	(11.49)	1.29	22.49	(14.09)	25.18	(5.42)	0.81	2.05	1.93		
	EXCESS RETURN			6.83	9.68	7.47	(0.16)	5.13	0.32	5.14	9.68	5.23	3.71	2.69		
96	TRS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - GROSS	676	0.83	20.24	(2.94)	(10.90)	(6.33)	22.84	(18.62)	35.63	(2.94)	0.39	4.58	6.47	05/01/2013	
	ESTIMATED INVESTMENT FEES			(0.14)	(0.43)	(0.20)	(0.43)	(0.54)	(0.38)	(0.61)	(0.43)	(0.46)	(0.49)			
	TRS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - NET MGR			20.11	(3.36)	(11.10)	(6.76)	22.30	(19.00)	35.02	(3.36)	(0.07)	4.10			
	S&P EPAC SMALL CAP USD NET			20.83	(4.00)	(12.67)	(6.38)	23.71	(18.58)	33.47	(4.00)	0.00	3.21	5.14		
	EXCESS RETURN			(0.73)	0.63	1.57	(0.39)	(1.41)	(0.42)	1.55	0.63	(0.08)	0.89	1.33		
106	TRS-TOTAL WORLD ex-USA SMALL CAP PASSIVE - GROSS	494	0.61	22.29	(2.13)	(12.03)	(5.97)	25.61	(17.78)	33.71	(2.13)	1.28	4.51	4.60	02/01/2014	
	ESTIMATED INVESTMENT FEES			(0.01)	(0.03)	(0.02)	(0.05)	(0.05)	(0.04)	(0.07)	(0.03)	(0.05)	(0.04)	(0.04)		
	TRS-TOTAL WORLD ex-USA SMALL CAP PASSIVE - NET MGR			22.27	(2.16)	(12.05)	(6.02)	25.56	(17.82)	33.64	(2.16)	1.24	4.47	4.57		
	WORLD EX USA SC PASSIVE CUSTOM BM			21.66	(3.20)	(12.87)	(6.17)	25.41	(18.07)	33.31	(3.20)	0.74	3.94	4.05		
	EXCESS RETURN			0.61	1.04	0.83	0.15	0.15	0.25	0.33	1.04	0.49	0.53	0.51		
116	TRS-TOTAL WORLD ex-USA LARGE & MID CAP PASSIVE - GROSS	1,161	1.43	15.94	(4.64)	(10.80)	1.61	22.69	(13.54)	24.52	(4.64)	1.40	2.35	3.52	07/01/2011	
	ESTIMATED INVESTMENT FEES			(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)			
	TRS-TOTAL WORLD ex-USA LARGE & MID CAP PASSIVE - NET MGR			15.94	(4.65)	(10.81)	1.60	22.67	(13.55)	24.51	(4.65)	1.39	2.34			
	NYC CUSTOM WORLD EX US INDEX			15.34	(5.42)	(11.49)	1.29	22.49	(14.09)	24.12	(5.42)	0.84	1.88	3.20		
	EXCESS RETURN			0.60	0.77	0.68	0.31	0.18	0.54	0.40	0.77	0.55	0.46	0.33		

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	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	FYE 2019	2019	2018	2017	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
EQUITY RETURN SUMMARY															
128 TRS-TOTAL EMERGING MARKETS - GROSS	7,945	9.78	19.59	(7.70)	(12.65)	5.13	16.30	(13.68)	35.24	(7.70)	(0.19)	2.09		(0.24)	02/01/2011
ESTIMATED INVESTMENT FEES			(0.09)	(0.29)	(0.13)	(0.34)	(0.37)	(0.26)	(0.50)	(0.29)	(0.32)	(0.34)			
TRS-TOTAL EMERGING MARKETS - NET MGR			19.49	(7.99)	(12.78)	4.79	15.93	(13.94)	34.73	(7.99)	(0.51)	1.74			
TRS CUSTOM EM INDEX			18.08	(3.47)	(9.78)	3.96	15.98	(13.39)	34.19	(3.47)	0.89	3.06			
EXCESS RETURN			1.41	(4.52)	(3.00)	0.83	(0.04)	(0.55)	0.54	(4.52)	(1.40)	(1.32)			
138 TRS-TOTAL ACTIVE EMERGING MARKETS - GROSS	5,572	6.86	20.35	(9.74)	(14.22)	5.57	16.47	(14.05)	36.26	(9.74)	(0.76)	1.76		0.82	04/01/2012
ESTIMATED INVESTMENT FEES			(0.13)	(0.40)	(0.19)	(0.46)	(0.51)	(0.37)	(0.68)	(0.40)	(0.44)	(0.48)			
TRS-TOTAL ACTIVE EMERGING MARKETS - NET MGR			20.21	(10.14)	(14.42)	5.10	15.96	(14.43)	35.58	(10.14)	(1.20)	1.28			
TRS CUSTOM EM INDEX			18.08	(3.47)	(9.78)	3.96	15.98	(13.39)	34.19	(3.47)	0.89	3.06		1.56	
EXCESS RETURN			2.13	(6.67)	(4.63)	1.14	(0.02)	(1.03)	1.38	(6.67)	(2.09)	(1.78)		(0.74)	
148 TRS-TOTAL PASSIVE EMERGING MARKETS - GROSS	2,373	2.92	18.04	(3.94)	(9.87)	4.05	15.74	(12.87)	33.14	(3.94)	0.73	2.59		(0.24)	04/01/2011
ESTIMATED INVESTMENT FEES			(0.01)	(0.03)	(0.01)	(0.03)	(0.03)	0.00	(0.14)	(0.03)	(0.04)	(0.05)			
TRS-TOTAL PASSIVE EMERGING MARKETS - NET MGR			18.03	(3.97)	(9.89)	4.02	15.70	(12.87)	32.99	(3.97)	0.69	2.54			
TRS CUSTOM EM PASSIVE INDEX			18.08	(3.47)	(9.78)	3.96	15.98	(12.99)	33.05	(3.47)	0.85	2.71			
EXCESS RETURN			(0.05)	(0.50)	(0.10)	0.06	(0.27)	0.12	(0.05)	(0.50)	(0.16)	(0.17)			
158 TRS-TOTAL INTERNATIONAL FUND OF FUNDS - GROSS	590	0.73	18.45	(2.56)	(9.97)	(0.15)	24.43	(15.05)		(2.56)	1.93			2.86	05/01/2017
ESTIMATED INVESTMENT FEES			(0.17)	(0.50)	(0.24)	(0.51)	(0.63)	(0.44)		(0.50)	(0.53)			(0.53)	
TRS-TOTAL INTERNATIONAL FUND OF FUNDS - NET MGR			18.29	(3.06)	(10.21)	(0.66)	23.79	(15.50)		(3.06)	1.41			2.32	
NYC BLENDED CUSTOM BENCHMARK FOR FOF (TRS)			16.96	(4.60)	(10.98)	0.76	21.62	(14.39)		(4.60)	0.92			1.96	
EXCESS RETURN			1.33	1.54	0.78	(1.42)	2.18	(1.11)		1.54	0.48			0.37	
168 TRS-TOTAL GLOBAL EQUITY - GROSS	296	0.36	16.43	5.90	(3.44)		34.96			5.90				10.22	08/01/2018
ESTIMATED INVESTMENT FEES			(0.17)	(0.61)	(0.28)		(0.85)			(0.61)				(0.64)	
TRS-TOTAL GLOBAL EQUITY - NET MGR			16.27	5.30	(3.72)		34.11			5.30				9.58	
MSCI WORLD INDEX			19.36	2.84	(5.77)		27.67			2.84				3.11	
EXCESS RETURN			(3.09)	2.45	2.05		6.44			2.45				6.46	

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ALTERNATIVE EQUITY RETURN DETAIL																
180	TRS-TOTAL REAL ESTATE SECURITIES - GROSS	1,059	1.30	10.50	(14.30)	(19.46)	10.08	24.92	(5.39)	7.95	(14.30)	(0.12)	3.10	8.85	9.69	01/01/2003
	ESTIMATED INVESTMENT FEES			(0.12)	(0.35)	(0.17)	(0.46)	(0.50)	(0.40)	(0.45)	(0.35)	(0.41)	(0.39)			
	TRS-TOTAL REAL ESTATE SECURITIES - NET MGR			10.38	(14.65)	(19.62)	9.63	24.42	(5.79)	7.50	(14.65)	(0.53)	2.71			
	DJ US SELECT REAL ESTATE SECURITIES INDEX			9.11	(17.71)	(22.01)	9.75	23.10	(4.22)	3.76	(17.71)	(1.99)	2.42	8.24	8.61	
	EXCESS RETURN			1.27	3.05	2.38	(0.13)	1.31	(1.57)	3.74	3.05	1.46	0.28	0.61	1.08	
190	TRS-TOTAL PRIVATE EQUITY (TIME WEIGHTED) - GROSS	4,294	5.29	(7.98)	3.14	(4.24)	16.00	13.28	18.45	19.65	3.14	12.44	11.78	11.99	11.85	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.14)	(0.92)	(0.32)	(1.08)	(1.21)	(0.81)	(1.20)	(0.92)	(0.98)	(1.00)			
	TRS-TOTAL PRIVATE EQUITY (TIME WEIGHTED) - NET MGR			(8.12)	2.22	(4.56)	14.92	12.07	17.65	18.45	2.22	11.46	10.78			
	NYC R3000 +3% LAGGED			(20.26)	(6.37)	(12.38)	12.01	6.00	21.06	22.22	(6.37)	7.12	8.93	13.70	11.72	
	EXCESS RETURN			12.15	8.59	7.83	2.91	6.06	(3.41)	(3.77)	8.59	4.34	1.85	(1.71)	0.13	
200	TRS-TOTAL PRIVATE REAL ESTATE (TIME WEIGHTED) - GROSS	3,125	3.85	(3.55)	0.86	(1.09)	8.63	5.43	11.16	11.17	0.86	6.66	9.00	12.68	9.36	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.14)	(0.68)	(0.27)	(0.60)	(0.78)	(0.52)	(0.64)	(0.68)	(0.63)	(0.61)			
	TRS-TOTAL PRIVATE REAL ESTATE (TIME WEIGHTED) - NET MGR			(3.69)	0.18	(1.36)	8.03	4.65	10.64	10.53	0.18	6.03	8.40			
	NCREIF NFI-ODCE NET + 100 BP			(1.51)	2.34	(0.52)	6.51	5.43	8.43	7.72	2.34	5.76	7.40			
	EXCESS RETURN			(2.18)	(2.16)	(0.84)	1.51	(0.78)	2.21	2.81	(2.16)	0.26	0.99			
210	TRS-TOTAL INFRASTRUCTURE (TIME WEIGHTED) - GROSS	995	1.22	(1.19)	7.95	0.23	13.11	13.40	15.69	20.50	7.95	13.37	12.66		13.60	12/01/2013
	ESTIMATED INVESTMENT FEES			(0.36)	(1.53)	(0.65)	(1.15)	(1.34)	(1.19)	(2.41)	(1.53)	(1.50)	(1.50)		(2.50)	
	TRS-TOTAL INFRASTRUCTURE (TIME WEIGHTED) - NET MGR			(1.54)	6.42	(0.42)	11.96	12.06	14.50	18.09	6.42	11.86	11.16		11.09	
	CPI + 4%			0.70	4.74	1.50	5.75	6.38	6.02	6.20	4.74	5.82	5.66		5.50	
	EXCESS RETURN			(2.24)	1.69	(1.91)	6.21	5.68	8.49	11.89	1.69	6.05	5.50		5.59	

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FIXED INCOME RETURN SUMMARY															
222 TRS-TOTAL FIXED INCOME - GROSS	32,095	39.51	3.04	9.17	6.10	7.76	10.16	(0.18)	5.32	9.17	6.05	5.14	5.26	7.97	02/01/1980
ESTIMATED INVESTMENT FEES			(0.02)	(0.12)	(0.05)	(0.11)	(0.12)	(0.11)	(0.14)	(0.12)	(0.12)	(0.13)			
EST MANAGEMENT FEES			(0.02)	(0.12)	(0.05)	(0.11)	(0.12)	(0.11)	(0.14)	(0.12)	(0.12)	(0.13)			
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
TRS-TOTAL FIXED INCOME - NET MGR			3.02	9.05	6.04	7.65	10.04	(0.28)	5.17	9.05	5.93	5.01			
230 TRS-TOTAL FIXED INCOME (ex ALTERNATIVE CREDIT & CASH) - GROSS	22,730	27.98	2.68	13.13	10.22	8.46	10.14	(0.73)	4.65	13.13	7.13	5.56		5.11	11/01/2013
ESTIMATED INVESTMENT FEES			(0.01)	(0.06)	(0.03)	(0.05)	(0.06)	(0.05)	(0.08)	(0.06)	(0.06)	(0.08)		(0.08)	
EST MANAGEMENT FEES			(0.01)	(0.06)	(0.03)	(0.05)	(0.06)	(0.05)	(0.08)	(0.06)	(0.06)	(0.08)		(0.08)	
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
TRS-TOTAL FIXED INCOME (ex ALTERNATIVE CREDIT & CASH) - NET MGR			2.67	13.07	10.19	8.41	10.08	(0.78)	4.57	13.07	7.07	5.48		5.03	
238 TRS-TOTAL STRUCTURED FIXED INCOME - GROSS	18,588	22.88	2.37	14.54	11.54	9.22	10.50	(0.78)	5.03	14.54	7.68	5.98	5.25	7.58	01/01/1985
ESTIMATED INVESTMENT FEES			(0.01)	(0.05)	(0.02)	(0.05)	(0.05)	(0.04)	(0.06)	(0.05)	(0.05)	(0.06)			
TRS-TOTAL STRUCTURED FIXED INCOME - NET MGR			2.36	14.49	11.52	9.18	10.46	(0.83)	4.97	14.49	7.64	5.92			
NYC CUSTOM STRUCTURED INDEX-TRS			2.08	18.24	14.30	10.66	12.99	(1.23)	6.80	18.24	9.33				
EXCESS RETURN			0.28	(3.75)	(2.79)	(1.49)	(2.54)	0.40	(1.83)	(3.75)	(1.70)				
248 TRS-TOTAL GOVERNMENT - GROSS	9,700	11.94	(0.09)	17.75	15.17	9.47	10.19	(1.01)	4.71	17.75	8.70	6.24	5.40	7.41	01/01/1987
ESTIMATED INVESTMENT FEES			(0.00)	(0.03)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)	(0.02)	(0.03)			
TRS-TOTAL GOVERNMENT - NET MGR			(0.09)	17.72	15.16	9.45	10.16	(1.03)	4.69	17.72	8.67	6.21			
CUSTOM GOVERNMENT BENCHMARK - TEACHERS			0.40	25.32	21.10	12.24	14.89	(1.89)	8.60	25.32	12.02	9.28	7.78	8.28	
EXCESS RETURN			(0.49)	(7.59)	(5.94)	(2.79)	(4.73)	0.86	(3.92)	(7.59)	(3.35)	(3.07)	(2.38)	(0.87)	
258 TRS-TOTAL MORTGAGE - GROSS	4,199	5.17	1.14	6.16	3.93	6.59	6.79	0.98	2.65	6.16	4.25	3.40	3.51	6.30	02/01/1987
ESTIMATED INVESTMENT FEES			(0.01)	(0.05)	(0.02)	(0.06)	(0.05)	(0.06)	(0.07)	(0.05)	(0.06)	(0.06)			
TRS-TOTAL MORTGAGE - NET MGR			1.13	6.11	3.90	6.53	6.74	0.92	2.58	6.11	4.20	3.34			
FTSE MORTGAGE INDEX			0.32	5.96	3.60	6.39	6.68	1.01	2.47	5.96	4.11	3.29	3.09	6.13	
EXCESS RETURN			0.81	0.15	0.30	0.15	0.07	(0.09)	0.12	0.15	0.08	0.05	0.42	0.18	
268 TRS-TOTAL INVESTMENT GRADE CREDIT - GROSS	4,690	5.77	9.90	9.76	5.09	10.54	14.49	(2.23)	6.80	9.76	6.48	5.87	5.71	7.03	01/01/1987
ESTIMATED INVESTMENT FEES			(0.03)	(0.11)	(0.05)	(0.11)	(0.12)	(0.10)	(0.10)	(0.11)	(0.11)	(0.10)			
TRS-TOTAL INVESTMENT GRADE CREDIT - NET MGR			9.88	9.65	5.04	10.42	14.37	(2.33)	6.70	9.65	6.37	5.77			
NYC - INVESTMENT GRADE CREDIT			8.28	9.26	5.02	10.13	13.40	(1.90)	6.04	9.26	6.11	5.48	5.16		
EXCESS RETURN			1.60	0.39	0.02	0.30	0.98	(0.43)	0.67	0.39	0.27	0.29	0.55		
278 TRS-TOTAL CORE FI- DEVELOPING MGRS - GROSS	284	0.35	5.42	8.97	6.09	8.16	10.11	(1.03)	4.27	8.97	5.45	4.72		4.44	06/01/2015
ESTIMATED INVESTMENT FEES			(0.05)	(0.20)	(0.10)	(0.20)	(0.21)	(0.19)	(0.19)	(0.20)	(0.20)	(0.20)		(0.20)	
TRS-TOTAL CORE FI- DEVELOPING MGRS - NET MGR			5.37	8.77	6.00	7.96	9.90	(1.22)	4.08	8.77	5.25	4.52		4.25	
BBG BARC AGG (DLY)			2.90	8.74	6.14	7.87	8.72	0.01	3.54	8.74	5.32	4.30		4.01	
EXCESS RETURN			2.48	0.03	(0.14)	0.09	1.19	(1.23)	0.54	0.03	(0.07)	0.42		0.24	

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FIXED INCOME RETURN SUMMARY																
290	TRS-TOTAL CORE FI- EMERGING MGRS - GROSS	-				8.22	9.25	0.29	4.51						06/01/2012	
	ESTIMATED INVESTMENT FEES					(0.37)	(0.37)	(0.34)	(0.48)							
	TRS-TOTAL CORE FI- EMERGING MGRS - NET MGR					7.85	8.88	(0.05)	4.02							
	BBG BARC AGG (DLY)					7.87	8.72	0.01	3.54							
	EXCESS RETURN					(0.02)	0.16	(0.06)	0.48							
300	TRS-TOTAL TIPS - GROSS	3,159	3.89	4.30	8.43	6.16	4.84	8.46	(1.25)	3.06	8.43	5.12	3.78	3.57	4.15	06/01/2005
	ESTIMATED INVESTMENT FEES			(0.00)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)			
	TRS-TOTAL TIPS - NET MGR			4.30	8.41	6.15	4.82	8.44	(1.27)	3.04	8.41	5.10	3.77			
	BBG BARC GBL INF-LK: US TIPS (DLY)			4.24	8.28	6.01	4.84	8.43	(1.26)	3.01	8.28	5.05	3.75	3.52	4.01	
	EXCESS RETURN			0.05	0.13	0.14	(0.02)	0.01	(0.01)	0.04	0.13	0.06	0.02	0.05	0.14	
310	TRS-TOTAL CONVERTIBLE BONDS - GROSS	-				7.31	17.22	(0.06)	11.75						07/01/2008	
	ESTIMATED INVESTMENT FEES					(0.40)	(0.44)	(0.35)	(0.46)							
	TRS-TOTAL CONVERTIBLE BONDS - NET MGR					6.91	16.78	(0.41)	11.29							
	ICE BOFA ALL US CONV EX MANDATORY					8.00	22.89	0.65	15.70							
	EXCESS RETURN					(1.10)	(6.11)	(1.06)	(4.41)							
320	TRS-TOTAL TARGETED INVESTMENTS (NO CASH) - GROSS	698	0.86	1.25	7.67	5.31	9.22	8.78	1.00	3.70	7.67	5.37	5.05	4.81	7.90	12/01/1984
	ESTIMATED INVESTMENT FEES			(0.05)	(0.20)	(0.09)	(0.24)	(0.21)	(0.24)	(0.24)	(0.20)	(0.22)	(0.23)	(0.25)	(0.14)	
	TRS-TOTAL TARGETED INVESTMENTS (NO CASH) - NET MGR			1.20	7.48	5.21	8.98	8.57	0.77	3.46	7.48	5.15	4.82	4.56	7.77	
	TEACHERS CUSTOM BENCHMARK (NO CASH)			1.64	7.51	5.03	7.22	7.65	0.86	3.11	7.51	4.90	4.00	3.66		
	EXCESS RETURN			(0.43)	(0.04)	0.18	1.76	0.91	(0.09)	0.35	(0.04)	0.25	0.82	0.90		

Consolidated Performance Report



Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	FYE 2019	2019	2018	2017	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
ALTERNATIVE CREDIT INCOME RETURN DETAIL															
332 TRS-TOTAL HIGH YIELD - GROSS	4,024	4.95	9.96	0.68	(3.67)	8.11	15.22	(2.09)	6.92	0.68	3.57	4.56	6.36	5.85	08/01/1998
ESTIMATED INVESTMENT FEES			(0.09)	(0.33)	(0.16)	(0.32)	(0.36)	(0.31)	(0.35)	(0.33)	(0.33)	(0.34)			
TRS-TOTAL HIGH YIELD - NET MGR			9.87	0.36	(3.82)	7.78	14.86	(2.39)	6.57	0.36	3.24	4.21			
HIGH YIELD CUSTOM BENCHMARK			10.14	(0.00)	(3.83)	7.48	14.32	(2.34)	7.03	(0.00)	3.25	4.35	6.34	5.54	
EXCESS RETURN			(0.26)	0.36	0.01	0.31	0.54	(0.06)	(0.46)	0.36	(0.01)	(0.13)	0.02	0.31	
342 TRS- TOTAL BANK LOANS - GROSS	1,664	2.05	7.38	(1.46)	(4.51)	3.53	7.94	1.07	4.38	(1.46)	2.21	3.06		3.72	11/01/2012
ESTIMATED INVESTMENT FEES			(0.06)	(0.29)	(0.13)	(0.33)	(0.34)	(0.33)	(0.35)	(0.29)	(0.32)	(0.33)			
TRS-TOTAL BANK LOANS - NET MGR			7.32	(1.75)	(4.64)	3.19	7.60	0.74	4.04	(1.75)	1.88	2.72			
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)	4.15	8.17	1.14	4.25	(2.27)	2.13	2.94		3.51	
EXCESS RETURN			(2.39)	0.52	0.12	(0.95)	(0.57)	(0.41)	(0.21)	0.52	(0.25)	(0.21)		0.20	
352 TRS-TOTAL OPPORTUNISTIC FIXED INCOME - GROSS	2,384	2.94	(4.85)	(2.13)	(4.42)	5.14	5.28	6.37	8.01	(2.13)	3.33	3.64	6.49	6.33	10/01/2007
ESTIMATED INVESTMENT FEES			(0.03)	(0.16)	(0.07)	(0.15)	(0.18)	(0.15)	(0.12)	(0.16)	(0.17)	(0.16)			
TRS-TOTAL OPPORTUNISTIC FIXED INCOME - NET MGR			(4.88)	(2.29)	(4.49)	5.00	5.10	6.22	7.89	(2.29)	3.16	3.48			
OPPORTUNISTIC FIXED INCOME JPMGHY / CSFB 50/50 BLEND PLUS 300			11.06	0.88	(3.82)	9.26	14.66	2.36	9.42	0.88	5.56	6.89	8.66	8.49	
EXCESS RETURN			(15.94)	(3.17)	(0.67)	(4.26)	(9.56)	3.86	(1.53)	(3.17)	(2.40)	(3.41)	(2.17)	(2.17)	
CASH SUMMARY															
364 Short Term TRS - GROSS	1,293	1.59	0.06	1.46	0.44	2.34	2.25	1.96	1.21	1.46	1.77	1.34	0.87		04/01/1982
ESTIMATED INVESTMENT FEES			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Short Term TRS - NET MGR			0.06	1.46	0.44	2.34	2.25	1.96	1.21	1.46	1.77	1.34	0.87		
368 Cash Account	0	0.00													
370 Securities Lending	0	0.00													
372 KKR Cash Account	0	0.00													



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

Appendix B

Public Markets Manager Performance Detail

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
EQUITY SUMMARY										
US EQUITY										
Cooke and Bieler-US SCV	93	0.12	30.08		(16.23)					
RUSSELL 2000 VALUE DAILY			18.91		(23.50)					
Excess			11.17		7.27					
T Rowe Price-US SCV	123	0.15	19.28							
RUSSELL 2000 VALUE DAILY			18.91							
Excess			0.38							
PanAgora-US SCC	182	0.22	26.38							
RUSSELL 2000 (DAILY)			25.42							
Excess			0.96							
BlackRock US SCG R2000	61	0.08	30.05	3.34	(3.35)	28.70	(9.26)	22.34	11.26	(1.51)
RUSSELL 2000 GROWTH DAILY			30.58	3.48	(3.06)	28.48	(9.31)	22.17	11.32	(1.38)
Excess			(0.53)	(0.13)	(0.29)	0.22	0.05	0.18	(0.06)	(0.13)
BlackRock US SCV R2000	324	0.40	18.78	(17.27)	(23.50)	22.73	(12.74)	7.86	31.73	(7.49)
RUSSELL 2000 VALUE DAILY			18.91	(17.48)	(23.50)	22.39	(12.86)	7.84	31.74	(7.47)
Excess			(0.12)	0.21	(0.00)	0.34	0.13	0.02	(0.01)	(0.02)
Brown Asset Mgmt US SCG	656	0.81	36.86	16.68	15.28	30.13	1.18	29.74	10.35	8.62
RUSSELL 2000 GROWTH DAILY			30.58	3.48	(3.06)	28.48	(9.31)	22.17	11.32	(1.38)
Excess			6.28	13.20	18.34	1.64	10.49	7.57	(0.97)	10.00
BlackRock US LMC R1000 Core	21,110	25.99	21.77	7.55	(2.73)	31.38				
RUSSELL 1000 (DAILY)			21.82	7.48	(2.81)	31.43				
Excess			(0.06)	0.07	0.08	(0.05)				

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
FUND OF FUNDS										
TOTAL FUNDS OF FUNDS	107	0.13	24.96	(8.21)	(13.24)	23.40	(8.24)			
RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	25.52	(11.01)			
Excess			(0.45)	(1.59)	(0.26)	(2.13)	2.77			
TRS-TOTAL LEGATO	107	0.13	24.96	(8.21)	(13.24)	23.40	(8.17)			
RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	25.52	(11.01)			
Excess			(0.45)	(1.59)	(0.26)	(2.13)	2.84			
NON - US EQUITY										
Causeway WorldxUS LMCC	1,101	1.35	18.75	(10.94)	(18.82)	24.15	(18.74)	26.91	(0.79)	(2.05)
NYC Developed Value Benchmark			15.34	(5.42)	(11.49)	22.49	(14.09)	22.77	5.02	(5.68)
Excess			3.40	(5.52)	(7.33)	1.66	(4.65)	4.15	(5.81)	3.63
Sprucegrove WorldxUS LMCC	1,214	1.49	11.88	(14.62)	(18.98)	20.72	(14.09)	26.17	8.56	(6.95)
NYC Developed Value Benchmark			15.34	(5.42)	(11.49)	22.49	(14.09)	22.77	5.02	(5.68)
Excess			(3.46)	(9.20)	(7.49)	(1.77)	(0.00)	3.40	3.53	(1.27)
Baillie Gifford WorldxUS LMCC	1,878	2.31	38.82	28.54	15.73	36.88	(14.96)	39.93	2.04	(2.85)
NYC Developed Growth Benchmark			15.34	(5.42)	(11.49)	22.49	(14.09)	27.77	(3.04)	4.09
Excess			23.47	33.96	27.22	14.39	(0.87)	12.16	5.09	(6.94)
Walter Scott WorldxUS LMCC	1,651	2.03	14.99	8.59	0.40	27.75	(7.69)	27.53	4.37	1.60
NYC Developed Growth Benchmark			15.34	(5.42)	(11.49)	22.49	(14.09)	27.77	(3.04)	4.09
Excess			(0.35)	14.01	11.88	5.25	6.40	(0.24)	7.41	(2.49)
Acadian WorldxUS SCC	363	0.45	20.10	(4.04)	(10.54)	20.79	(19.67)	38.42	5.46	10.97
S&P EPAC Small Cap USD NET			20.83	(4.00)	(12.67)	23.71	(18.58)	33.47	1.34	8.58
Excess			(0.73)	(0.04)	2.13	(2.92)	(1.09)	4.96	4.12	2.38
Fidelity WorldxUS SCC	201	0.25	19.08	(1.36)	(10.99)	25.49	(18.23)	31.25	(0.81)	11.69
S&P EPAC Small Cap USD NET			20.83	(4.00)	(12.67)	23.71	(18.58)	33.47	1.34	8.58
Excess			(1.76)	2.64	1.68	1.78	0.35	(2.21)	(2.15)	3.11

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
Alger EAFE SCC	111	0.14	22.02	(4.67)	(13.06)					
MSCI EAFE SMALL CAP NET (DAILY)			19.88	(3.52)	(13.11)					
Excess			2.13	(1.14)	0.05					
SSGA WorldxUS LMC NYC Custom IDX	1,161	1.43	15.94	(4.65)	(10.81)	22.67	(13.55)	24.51	1.34	(0.30)
NYC Custom World ex US Index			15.34	(5.42)	(11.49)	22.49	(14.09)	24.12	1.00	(0.81)
Excess			0.60	0.77	0.68	0.18	0.54	0.40	0.34	0.52
SSGA WorldxUS SC Custom IDX ¹	494	0.61	22.27	(2.16)	(12.05)	25.56	(17.82)	33.64	2.93	9.95
World ex USA SC PASSIVE CUSTOM BM			21.66	(3.20)	(12.87)	25.41	(18.07)	33.31	2.18	9.59
Excess			0.61	1.04	0.83	0.15	0.25	0.33	0.75	0.37
EMERGING MARKETS										
Acadian EM	1,151	1.42	17.17	(4.29)	(10.84)	19.36				
TRS Custom EM Index			18.08	(3.47)	(9.78)	15.98				
Excess			(0.91)	(0.82)	(1.05)	3.38				
Baillie Gifford EM	2,034	2.50	24.10	(2.47)	(9.42)	23.71	(14.39)	41.33	4.02	(14.09)
TRS Custom EM Index			18.08	(3.47)	(9.78)	15.98	(13.39)	34.19	13.91	(17.04)
Excess			6.02	1.00	0.37	7.73	(1.00)	7.13	(9.90)	2.95
DFA EM	1,054	1.30	18.10	(18.13)	(19.37)	9.16	(13.17)	34.29	20.88	(21.72)
TRS Custom EM Index			18.08	(3.47)	(9.78)	15.98	(13.39)	34.19	13.91	(17.04)
Excess			0.01	(14.67)	(9.59)	(6.82)	0.23	0.09	6.97	(4.68)
Parametric EM	175	0.22	20.23	(17.75)	(19.66)	10.51	(14.52)	32.02	11.47	(19.97)
TRS Custom EM Index			18.08	(3.47)	(9.78)	15.98	(13.39)	34.19	13.91	(17.04)
Excess			2.15	(14.28)	(9.87)	(5.47)	(1.12)	(2.17)	(2.44)	(2.94)
RBC-EM ACG	545	0.67								
MSCI EMERGING MARKETS										
Excess										

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
UBS-EM ACC	601	0.74								
MSCI EMERGING MARKETS										
Excess										
Lazard EM	13	0.02				14.42	(17.29)	28.26		
TRS Custom EM Index						15.98	(13.39)	34.19		
Excess						(1.56)	(3.89)	(5.94)		
BlackRock MSCI EM Core	2,373	2.92	18.03	(3.97)	(9.89)	15.70	(12.87)	32.99	12.92	(17.99)
TRS Custom EM Passive Index			18.08	(3.47)	(9.78)	15.98	(12.99)	33.05	13.10	(17.81)
Excess			(0.05)	(0.50)	(0.10)	(0.27)	0.12	(0.05)	(0.18)	(0.17)
INTERNATIONAL FOF										
TRS-TOTAL INTERNATIONAL FOF	590	0.73	18.29	(3.06)	(10.21)	23.79	(15.50)			
NYC Blended Custom Benchmark for FoF (TRS)			16.96	(4.60)	(10.98)	21.62	(14.39)			
Excess			1.33	1.54	0.78	2.18	(1.11)			
TRS-TOTAL INTERNATIONAL BIVIUM	193	0.24	17.31	(4.48)	(12.82)	25.83	(18.16)			
NYC Blended Custom Benchmark for FoF (TRS)			16.96	(4.60)	(10.98)	21.62	(14.39)			
Excess			0.35	0.12	(1.84)	4.21	(3.77)			
TRS-TOTAL INTERNATIONAL FIS	198	0.24	17.64	(3.33)	(9.47)	21.96	(14.12)			
NYC Blended Custom Benchmark for FoF (TRS)			16.96	(4.60)	(10.98)	21.62	(14.39)			
Excess			0.68	1.27	1.52	0.34	0.27			
TRS-TOTAL INTERNATIONAL LEADING EDGE	199	0.25	19.90	(1.27)	(8.18)	23.62	(14.15)			
NYC Blended Custom Benchmark for FoF (TRS)			16.96	(4.60)	(10.98)	21.62	(14.39)			
Excess			2.94	3.33	2.81	2.01	0.24			
GLOBAL EQUITY										
Fiera-Global	296	0.36	16.27	5.30	(3.72)	34.11				
MSCI World Index			19.36	2.84	(5.77)	27.67				
Excess			(3.09)	2.45	2.05	6.44				

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
REAL ESTATE SECURITIES										
Adelante REITS	333	0.41	10.79	(9.53)	(15.29)	27.85	(5.32)	7.32	3.90	4.81
DJ US SELECT REAL ESTATE SECURITIES INDEX			9.11	(17.71)	(22.01)	23.10	(4.22)	3.76	6.65	4.46
Excess			1.68	8.18	6.72	4.75	(1.10)	3.56	(2.75)	0.36
CenterSquare REITS	232	0.29	10.90	(12.90)	(17.53)	23.66	(5.07)	5.96	7.98	5.87
DJ US SELECT REAL ESTATE SECURITIES INDEX			9.11	(17.71)	(22.01)	23.10	(4.22)	3.76	6.65	4.46
Excess			1.79	4.81	4.48	0.56	(0.85)	2.20	1.33	1.41
Cohen Steers REITS	224	0.28	9.78	(13.46)	(19.43)	28.10	(3.88)	7.44	4.96	5.59
DJ US SELECT REAL ESTATE SECURITIES INDEX			9.11	(17.71)	(22.01)	23.10	(4.22)	3.76	6.65	4.46
Excess			0.67	4.25	2.57	5.00	0.33	3.68	(1.69)	1.13
TRS-TOTAL MORGAN STANLEY REITS	271	0.33	9.95	(22.24)	(26.04)	19.02	(7.88)	9.25	3.49	(1.63)
Morgan Stanley Custom RESI Index			9.11	(17.71)	(22.01)	23.10	(4.22)	8.64	2.37	(1.53)
Excess			0.84	(4.53)	(4.03)	(4.08)	(3.66)	0.62	1.13	(0.11)
FIXED INCOME SUMMARY										
STRUCTURED FIXED INCOME										
BlackRock Mortgages	3,388	4.17	1.25	6.32	4.07	6.88	1.00	2.63	2.17	1.76
FTSE MORTGAGE INDEX			0.32	5.96	3.60	6.68	1.01	2.47	1.59	1.56
Excess			0.93	0.35	0.47	0.21	(0.01)	0.16	0.58	0.20
BlackRock Mortgages NA	7	0.01	6.95	5.67	3.05	16.58	3.51	38.38	12.34	18.20
FTSE MORTGAGE INDEX			0.32	5.96	3.60	6.68	1.01	2.47	1.59	1.56
Excess			6.63	(0.29)	(0.55)	9.90	2.50	35.91	10.75	16.64
Neuberger Berman Mortgages	804	0.99	0.57	5.38	3.27	6.32	0.82	2.42	1.49	1.37
FTSE MORTGAGE INDEX			0.32	5.96	3.60	6.68	1.01	2.47	1.59	1.56
Excess			0.25	(0.59)	(0.34)	(0.35)	(0.19)	(0.05)	(0.09)	(0.19)

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
BlackRock Credit	826	1.02	9.30	9.69	5.25	14.06	(1.99)	6.31	5.57	(0.71)
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			1.02	0.43	0.24	0.66	(0.09)	0.27	0.01	(0.06)
Taplin Credit	331	0.41	9.64	9.92	5.15	15.08	(3.43)	7.99	9.02	(4.10)
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			1.36	0.66	0.13	1.68	(1.53)	1.95	3.46	(3.46)
T Rowe Price Credit	2,107	2.59	10.37	9.43	4.60	14.61	(2.41)	6.85	5.96	0.09
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			2.09	0.17	(0.42)	1.22	(0.51)	0.81	0.41	0.73
Prudential Credit	845	1.04	9.22	9.17	4.88	13.59	(1.94)	6.17	5.84	(0.16)
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			0.94	(0.09)	(0.14)	0.19	(0.03)	0.13	0.28	0.49
Barrow Hanley Credit	581	0.72	10.29	10.74	6.11	14.83	(2.41)	6.16	5.88	(0.11)
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			2.01	1.48	1.09	1.43	(0.51)	0.12	0.32	0.54
SSGA LI Treasury	2,265	2.79	0.47	17.91	15.27	10.50	(0.20)	5.13	1.48	0.50
NYC - Treasury Agency Plus Five			0.74	17.08	14.63	10.40	(0.05)	4.66	1.21	0.72
Excess			(0.28)	0.83	0.64	0.11	(0.15)	0.48	0.26	(0.23)
BlackRock LI Treasury	418	0.51	(0.17)	16.52	14.01	10.35	(0.18)	4.97	1.25	0.69
NYC - Treasury Agency Plus Five			0.74	17.08	14.63	10.40	(0.05)	4.66	1.21	0.72
Excess			(0.91)	(0.56)	(0.62)	(0.05)	(0.13)	0.31	0.03	(0.03)
SSGA ST Treasury 1-3Y	2,926	3.60	0.13	3.60	2.47	3.56	1.51	0.40		
FTSE USBIG Treasury 1-3 Y Index			0.27	4.06	2.94	3.56	1.56	0.42		
Excess			(0.13)	(0.46)	(0.47)	0.00	(0.05)	(0.02)		

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
SSGA LT Treasury 10Y Plus	4,084	5.03	(0.62)	25.46	21.22	14.88	(1.84)	8.44		
FTSE Treasury 10+			0.51	25.45	21.24	14.89	(1.89)	8.60		
Excess			(1.13)	0.00	(0.01)	(0.01)	0.05	(0.17)		
SSGA IT Treasury 1-10Y ²	7	0.01	0.43	7.02	5.76	5.08	2.05			
FTSE USBIG Treasury/Agency 1-10 y			0.58	6.99	5.74	5.18	1.42			
Excess			(0.15)	0.03	0.02	(0.09)	0.63			
HIGH YIELD										
Brigade High Yield	481	0.59	9.83	(0.94)	(5.23)	15.73				
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32				
Excess			(0.31)	(0.94)	(1.39)	1.41				
Eaton Vance High Yield	589	0.73	8.96	(0.03)	(4.20)	14.52				
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32				
Excess			(1.18)	(0.03)	(0.36)	0.21				
Neuberger Berman High Yield	741	0.91	9.61	(0.39)	(4.53)	14.16	(2.01)	5.74	14.89	(3.96)
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32	(2.08)	7.50	17.13	(4.43)
Excess			(0.53)	(0.39)	(0.69)	(0.16)	0.08	(1.76)	(2.24)	0.47
Nomura High Yield	486	0.60	9.95	(0.24)	(4.22)	13.99				
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32				
Excess			(0.18)	(0.24)	(0.39)	(0.33)				
Oaktree High Yield	369	0.45	9.72	0.63	(3.25)	14.01	(3.49)	5.75	14.96	(4.70)
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32	(2.08)	7.50	17.13	(4.43)
Excess			(0.42)	0.63	0.58	(0.31)	(1.41)	(1.75)	(2.17)	(0.26)
Stone Harbor High Yield	0	0.00					(2.65)	5.85	13.10	(4.47)
BBG BARC US HY - 2% Issr Cap							(2.08)	7.50	17.13	(4.43)
Excess							(0.56)	(1.65)	(4.03)	(0.04)

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
T Rowe Price High Yield	834	1.03	10.13	0.76	(3.70)	15.55	(2.30)	7.70	12.17	(1.17)
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32	(2.08)	7.50	17.13	(4.43)
Excess			(0.01)	0.77	0.13	1.23	(0.22)	0.19	(4.96)	3.26
Mackay Shields High Yield	522	0.64	10.70	2.12	(1.97)	13.96				
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32				
Excess			0.56	2.12	1.86	(0.36)				
BANK LOANS										
Barings Bank Loans	431	0.53	7.33	(3.08)	(5.83)	7.82	0.38	4.47	8.47	0.12
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)	8.17	1.14	4.25	9.88	(0.38)
Excess			(2.38)	(0.81)	(1.07)	(0.36)	(0.76)	0.22	(1.41)	0.50
Credit Suisse Bank Loans	459	0.57	7.42	(0.96)	(4.00)	8.31	1.04	4.66	8.96	2.57
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)	8.17	1.14	4.25	9.88	(0.38)
Excess			(2.29)	1.31	0.75	0.13	(0.10)	0.41	(0.92)	2.96
Guggenheim Bank Loans	4	0.00					1.24	3.82	7.84	2.07
CSFB LEVERAGED LOAN INDEX							1.14	4.25	9.88	(0.38)
Excess							0.10	(0.43)	(2.03)	2.45
Voya Bank Loans	352	0.43	6.65	(2.43)	(4.97)	7.74	0.33	3.19	7.71	1.21
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)	8.17	1.14	4.25	9.88	(0.38)
Excess			(3.06)	(0.17)	(0.21)	(0.44)	(0.81)	(1.06)	(2.17)	1.60
Wells Capital Bank Loans	0	0.00					0.17	3.18	7.18	1.17
CSFB LEVERAGED LOAN INDEX							1.14	4.25	9.88	(0.38)
Excess							(0.98)	(1.07)	(2.70)	1.55
Pinebridge Bank Loans	419	0.52	7.85	(0.68)	(3.90)					
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)					
Excess			(1.86)	1.59	0.86					

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
TIPS										
SSGA TIPS	2,274	2.80	4.33	8.44	6.18	8.44	(1.30)	3.06	4.66	(1.35)
BBG BARC Gbl Inf-Lk: US TIPS (Dly)			4.24	8.28	6.01	8.43	(1.26)	3.01	4.68	(1.44)
Excess			0.09	0.16	0.17	0.02	(0.04)	0.05	(0.03)	0.09
BlackRock TIPS	885	1.09	4.25	8.39	6.13	8.42	(1.18)	2.98	4.64	(1.24)
BBG BARC Gbl Inf-Lk: US TIPS (Dly)			4.24	8.28	6.01	8.43	(1.26)	3.01	4.68	(1.44)
Excess			0.01	0.11	0.12	(0.01)	0.08	(0.02)	(0.05)	0.20
CONVERTIBLE BONDS										
Advent Convertible Bonds	0	0.00				12.75	(1.65)	7.45	7.34	(1.98)
ICE BofA US Convertibles - Yield Alter						15.40	(0.42)	9.45	9.96	(8.77)
Excess						(2.65)	(1.23)	(2.00)	(2.62)	6.80
Victory Convertible Bonds	0	0.00				20.49	0.68	20.13	6.47	(0.20)
ICE BofA All IG US Convertibles						20.88	3.35	20.99	14.23	1.68
Excess						(0.39)	(2.67)	(0.87)	(7.76)	(1.88)
CORE FI - EMERGING MANAGERS										
Optimum Quantvest-Core	0	0.00				7.93	0.33	2.64	2.61	0.61
BBG BARC Agg (Dly)						8.72	0.01	3.54	2.65	0.55
Excess						(0.79)	0.32	(0.90)	(0.03)	0.06
Integrity-Core	0	0.00				8.56	(0.03)	3.93		
BBG BARC Agg (Dly)						8.72	0.01	3.54		
Excess						(0.16)	(0.04)	0.39		
New Century-Core Plus	0	0.00				8.52	0.12	4.04	2.37	(0.30)
BBG BARC Agg (Dly)						8.72	0.01	3.54	2.65	0.55
Excess						(0.19)	0.11	0.50	(0.28)	(0.85)

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
Ramirez-Core	0	0.00				9.67	0.07	4.47	3.64	1.12
BBG BARC Agg (Dly)						8.72	0.01	3.54	2.65	0.55
Excess						0.95	0.06	0.93	0.99	0.57
Pugh-Core Plus	0	0.00				8.92	(0.42)	4.12	3.48	0.79
BBG BARC Agg (Dly)						8.72	0.01	3.54	2.65	0.55
Excess						0.21	(0.43)	0.58	0.84	0.24
CORE FI - DEVELOPING MANAGERS										
LM Capital-Core Plus	127	0.16	4.30	8.56	5.93	9.76	(1.35)	3.89	3.50	
BBG BARC Agg (Dly)			2.90	8.74	6.14	8.72	0.01	3.54	2.65	
Excess			1.40	(0.18)	(0.21)	1.04	(1.36)	0.35	0.86	
GIA-Core Plus	95	0.12	5.56	7.57	4.62	10.13	(1.01)	4.37	4.24	
BBG BARC Agg (Dly)			2.90	8.74	6.14	8.72	0.01	3.54	2.65	
Excess			2.66	(1.17)	(1.52)	1.41	(1.02)	0.82	1.59	
Pugh-CorePlus	62	0.08								
BBG BARC Agg (Dly)										
Excess										
ECONOMICALLY TARGETED INVESTMENTS										
AFL-CIO Housing Investment Trust	323	0.40	1.80	7.03	5.29	7.78	0.16	3.17	1.94	1.13
BBG BARC Agg (Dly)			2.90	8.74	6.14	8.72	0.01	3.54	2.65	0.55
Excess			(1.10)	(1.70)	(0.85)	(0.94)	0.15	(0.38)	(0.71)	0.58
RBC Access MBS	156	0.19	2.04	7.55	5.19	7.21	0.49	2.64	1.61	1.83
Access RBC Benchmark			0.65	6.29	4.45	6.05	1.17	1.96	1.52	1.40
Excess			1.39	1.26	0.74	1.16	(0.69)	0.69	0.09	0.43
CPC Construction Facility	10	0.01	0.71	3.12	0.30	4.98	4.14	6.07	(3.95)	12.90
CPC CONST BENCHMARK			0.65	3.44	1.49	4.09	3.99	3.34	3.03	2.90
Excess			0.06	(0.32)	(1.19)	0.89	0.15	2.73	(6.99)	10.00

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
BOA PPAR FNMA	9	0.01	(1.18)	9.05	4.93	13.54	2.33	5.21	4.07	42.03
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(1.86)	1.85	0.78	5.74	0.47	1.60	1.69	39.53
Citibank PPAR FNMA	27	0.03	(0.40)	15.33	5.73	19.71	2.63	5.26	3.71	6.69
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(1.07)	8.12	1.58	11.91	0.77	1.65	1.33	4.20
Citibank PPAR GNMA	5	0.01	0.79	5.89	5.89	5.33	1.90	3.10	2.78	5.08
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.43	(0.10)	2.11	(1.41)	0.27	0.57	0.50	3.06
CFSB PPAR GNMA	2	0.00	0.81	5.97	5.63	5.91	0.99	3.83	3.21	5.90
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.45	(0.03)	1.85	(0.82)	(0.65)	1.30	0.93	3.88
CPC PPAR FNMA	80	0.10	(1.17)	7.80	4.72	13.18	2.31	5.06	6.15	8.96
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(1.84)	0.60	0.57	5.38	0.45	1.45	3.77	6.46
ECLF PPAR FNMA	2	0.00								
FNMA Plus 85bps										
Excess										
TRS-CPC PPAR GNMA	62	0.08	0.83	5.68	5.68	4.89	0.77	2.85	1.83	5.33
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.47	(0.32)	1.90	(1.85)	(0.86)	0.32	(0.44)	3.31
LIIF PPAR FNMA	13	0.02	(1.11)	11.85	5.04	16.35	2.27	9.55	5.03	6.29
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(1.78)	4.64	0.89	8.55	0.41	5.94	2.65	3.79

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2019	2018	2017	2016	2015
LIIF PPAR GNMA	2	0.00	0.85	5.68	4.50	5.54	2.53	2.52	3.88	3.92
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.49	(0.32)	0.72	(1.19)	0.89	(0.01)	1.61	1.91
LISC PPAR FNMA	1	0.00	(1.42)	14.27	9.13	14.95				
FNMA Plus 85bps			0.67	7.21	4.15	7.80				
Excess			(2.09)	7.06	4.98	7.15				
NCBCI PPAR FNMA	0	0.00	1.14	6.88	5.87	4.08	2.00	1.75	3.46	4.97
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			0.47	(0.33)	1.71	(3.72)	0.15	(1.86)	1.07	2.47
NCBCI PPAR GNMA	1	0.00	1.16	5.39	5.61	3.69	1.23	3.01	3.51	5.53
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.80	(0.61)	1.83	(3.04)	(0.41)	0.48	1.23	3.52
NHS PPAR GNMA	0	0.00	0.15	3.60	4.46	2.90	0.54	(2.93)	3.58	4.90
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			(0.21)	(2.40)	0.69	(3.84)	(1.09)	(5.46)	1.30	2.89
Wells Fargo PPAR FNMA	3	0.00	(1.42)	9.39	4.59	21.71				
FNMA Plus 85bps			0.67	7.21	4.15	7.80				
Excess			(2.09)	2.18	0.44	13.91				
CASH										
Short Term TRS	1,293	1.59	0.06	1.46	0.44	2.25	1.96	1.21	0.78	0.48
ICE BofA US 3-Month Treasury Bill			0.02	1.63	0.60	2.28	1.87	0.86	0.33	0.05
Excess			0.04	(0.17)	(0.15)	(0.03)	0.09	0.35	0.45	0.43
Cash Account	0	0.00								
Securities Lending	0	0.00								



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

Appendix C

Alternative Assets Manager Performance Detail

Alternative Assets Manager Performance Detail



Through March 31, 2020

	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
TOTAL PRIVATE EQUITY		10,527,072,368	8,081,488,661	6,958,631,062	4,223,515,804	1.38	9.5%
TOTAL LIQUIDATED		804,679,929	803,703,075	995,371,199	-	1.24	
TOTAL ACTIVE		9,722,392,440	7,277,785,587	5,963,259,863	4,223,515,804	1.40	
TOTAL ACTIVE							
Cypress Merchant Banking Partners II, LP	1999	50,000,000	53,983,573	50,623,035	24,183	0.94	-1.2%
Lincolnshire Equity Fund II, L.P.	1999	15,000,000	14,446,100	28,316,507	253,866	1.98	24.6%
SCP Private Equity Partners II, L.P.	2000	20,000,000	22,196,012	8,429,680	1,911,179	0.47	-8.5%
Solera Partners, L.P.	2000	15,000,000	20,054,250	31,226,365	116,841	1.56	7.4%
Apollo Investment Fund V, L.P.	2001	30,000,000	46,758,049	92,244,552	258,425	1.98	38.8%
RRE Ventures III, L.P.	2001	20,000,000	26,269,971	34,025,652	1,070,322	1.34	5.4%
Thomas McNerney & Partners, L.P.	2002	15,000,000	15,000,000	7,543,579	1,717,057	0.62	-7.3%
Ares Corporate Opportunities Fund, L.P.	2003	15,000,000	18,004,666	26,835,382	38,750	1.49	13.1%
Blackstone Capital Partners IV, L.P.	2003	30,000,000	30,690,321	77,506,027	237,524	2.53	37.8%
FS Equity Partners V, L.P.	2003	25,000,000	20,204,332	40,645,843	1,448,989	2.08	15.3%
Leeds Weld Equity Partners IV, L.P.	2003	15,000,000	15,441,454	20,171,550	28,771	1.31	4.2%
FdG Capital Partners II, L.P.	2004	35,000,000	37,720,808	43,606,491	2,043,571	1.21	3.7%
Lincolnshire Equity Fund III, L.P.	2004	25,000,000	25,003,156	35,566,467	9,449,040	1.80	28.1%
Markstone Capital Partners, L.P.	2004	35,000,000	40,766,689	17,074,753	163,685	0.42	-41.8%
New York/Fairview Emerging Managers (Tranche A), L.P.	2004	24,000,000	24,646,553	24,888,620	2,570,630	1.11	1.8%
Yucaipa American Alliance Fund I, L.P.	2004	55,000,000	80,825,203	95,185,290	3,809,806	1.22	4.6%
Blackstone Mezzanine Partners II, L.P.	2005	20,000,000	19,342,116	25,639,056	212,975	1.34	7.8%
JP Morgan Fleming (Tranche A), L.P.	2005	31,000,000	31,201,939	34,169,442	5,987,088	1.29	4.8%
NB NYC Growth Fund, LLC	2005	30,000,000	26,117,536	32,957,942	0	1.26	3.7%
New Mountain Partners II, L.P.	2005	23,225,800	21,482,843	40,969,939	361,947	1.92	13.6%
Palladium Equity Partners III, L.P.	2005	35,000,000	37,665,701	69,409,326	626,145	1.86	14.6%
Psilos Group Partners III, L.P.	2005	25,000,000	26,575,585	12,820,541	23,566,233	1.37	4.2%
Snow Phipps Group, L.P.	2005	15,000,000	17,775,294	15,590,643	4,794,510	1.15	3.1%
USPF II Institutional Fund, L.P.	2005	35,000,000	46,164,567	53,817,886	4,889,735	1.27	4.0%
Aisling Capital II, L.P.	2006	4,500,000	5,099,563	5,112,601	193,207	1.04	0.7%
Ampersand 2006, L.P.	2006	15,000,000	15,000,000	33,280,995	11,930,863	3.01	16.8%
Apollo Investment Fund VI, L.P.	2006	35,000,000	45,048,207	67,409,336	666,393	1.51	8.7%
Ares Corporate Opportunities Fund II, L.P.	2006	30,000,000	32,905,774	54,862,020	51,851	1.67	13.1%

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

Alternative Assets Manager Performance Detail



Through March 31, 2020

	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Arsenal Capital Partners II, L.P.	2006	13,500,000	16,525,966	31,930,803	116,331	1.94	12.1%
Avista Capital Partners, L.P.	2006	30,000,000	39,559,256	48,298,581	426,299	1.23	4.4%
BDCM Opportunity Fund II, L.P.	2006	25,000,000	37,213,402	77,551,921	22,260,627	2.68	18.3%
Blackstone Capital Partners V, L.P.	2006	75,600,000	76,527,551	125,510,871	2,076,893	1.67	8.3%
Catterton Partners VI, L.P.	2006	30,000,000	34,300,531	53,780,882	9,239,155	1.84	11.3%
Cinven Fourth Fund	2006	43,264,875	45,626,616	65,913,468	31,342	1.45	7.4%
Fairview Ventures Fund III, L.P.	2006	20,000,000	21,207,530	32,004,180	13,391,639	2.14	13.9%
First Reserve Fund XI, L.P.	2006	30,000,000	34,241,400	22,595,006	(8,959)	0.66	-10.7%
GF Capital Private Equity Fund, L.P.	2006	15,000,000	15,900,603	20,491,630	6,596,059	1.70	11.6%
InterMedia Partners VII, L.P.	2006	25,000,000	29,229,224	29,591,746	0	1.01	0.2%
Landmark Equity Partners XIII, L.P.	2006	25,000,000	23,702,196	30,218,971	1,277,300	1.33	5.0%
MidOcean Partners III, L.P.	2006	40,000,000	46,443,236	91,132,892	4,926,342	2.07	12.9%
RRE Ventures IV, L.P.	2006	25,000,000	31,713,745	22,967,573	19,963,880	1.35	4.2%
Terra Firma Capital Partners III, L.P.	2006	31,056,016	31,592,557	12,312,416	1,998,403	0.45	-9.5%
Thomas, McNerney & Partners II, L.P.	2006	15,000,000	14,867,607	32,724,518	1,388,446	2.29	16.7%
Carlyle Partners V, L.P.	2007	50,000,000	50,406,980	82,822,882	6,654,692	1.78	13.2%
Co-Investment Partners Europe, L.P.	2007	26,420,018	29,219,332	35,608,493	715,771	1.24	4.3%
Constellation Ventures III, L.P.	2007	15,000,000	17,295,938	8,712,259	4,457,285	0.76	-4.2%
FTVentures III, L.P.	2007	14,081,947	14,882,466	24,626,981	3,433,425	1.89	11.0%
GSO Capital Opportunities Fund, L.P.	2007	30,000,000	48,291,339	67,124,625	306,617	1.40	17.3%
Halyard Capital Fund II, L.P.	2007	15,000,000	13,003,177	15,892,199	3,416,538	1.48	6.9%
Montreux Equity Partners IV, L.P.	2007	15,000,000	14,930,359	8,224,849	11,681,324	1.33	4.2%
Nautic Partners VI, L.P.	2007	20,000,000	21,709,380	47,967,971	4,061,382	2.40	18.6%
New Mountain Partners III, L.P.	2007	35,000,000	35,949,400	47,758,635	24,249,569	2.00	12.8%
PCG Clean Energy & Technology Fund East, L.P.	2007	60,000,000	51,863,265	13,972,770	3,566,380	0.34	-15.2%
Pegasus Partners IV, L.P.	2007	20,000,000	26,382,521	20,483,112	4,101,545	0.93	-1.4%
Pine Brook Capital Partners, L.P.	2007	22,500,000	24,872,461	33,545,188	275,937	1.36	8.1%
Quaker BioVentures II, L.P.	2007	15,000,000	14,902,775	13,407,409	1,982,711	1.03	0.8%
RLJ Equity Partners Fund I, L.P.	2007	15,000,000	15,370,089	18,882,374	5,757,137	1.60	10.1%
SCP Vitalife Partners II, L.P.	2007	15,000,000	15,074,774	1,184	5,904,258	0.39	-10.1%
StarVest Partners II, L.P.	2007	20,000,000	20,106,956	8,820,023	9,935,294	0.93	-1.0%
Trilantic Capital Partners IV L.P.	2007	53,311,339	55,886,260	82,636,488	4,571,742	1.56	13.6%
USPF III Institutional Fund, L.P.	2007	30,000,000	35,493,985	36,616,209	6,477,446	1.21	3.5%

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

Alternative Assets Manager Performance Detail



Through March 31, 2020

	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Vista Equity Partners Fund III, L.P.	2007	25,000,000	26,880,279	63,887,396	1,990,170	2.45	26.9%
Aisling Capital III, L.P.	2008	10,500,000	11,843,931	27,387,186	529,933	2.36	26.4%
Apollo Investment Fund VII, L.P.	2008	50,000,000	61,200,709	97,467,460	4,586,814	1.67	22.8%
Ares Corporate Opportunities Fund III, L.P.	2008	60,000,000	71,227,683	145,319,902	8,774,583	2.16	20.8%
Avista Capital Partners II, L.P.	2008	50,000,000	65,983,085	103,339,707	3,804,157	1.62	14.4%
Blue Wolf Capital Fund II, L.P.	2008	20,000,000	21,768,204	25,173,874	8,092,484	1.53	9.2%
Bridgepoint Europe IV, L.P.	2008	26,482,499	24,683,679	33,847,774	3,844,637	1.53	9.6%
First Reserve Fund XII, L.P.	2008	30,000,000	33,919,785	17,332,917	4,018,822	0.63	-11.7%
GCM Grosvenor TRSCNY Emerging Manager Fund, L.P.	2008	59,373,737	73,791,219	67,216,539	38,544,568	1.43	9.9%
GI Partners III, L.P.	2008	30,000,000	32,406,721	50,541,557	309,955	1.57	13.0%
Landmark Equity Partners XIV, L.P.	2008	50,000,000	48,588,814	55,373,716	8,020,863	1.30	8.9%
Leeds Equity Partners V, L.P.	2008	40,000,000	40,780,195	69,987,160	26,898,549	2.38	19.1%
Levine Leichtman Capital Partners IV, L.P.	2008	25,000,000	26,635,586	42,253,395	2,110,417	1.67	18.0%
New York/Fairview Emerging Managers (Tranche B), L.P.	2008	35,000,000	34,997,529	42,925,952	42,149,478	2.43	18.1%
NGN BioMed Opportunity II, L.P.	2008	15,000,000	14,363,866	10,009,657	7,692,436	1.23	3.0%
Onex Partners III, L.P.	2008	40,000,000	43,741,968	58,210,973	8,622,827	1.53	10.6%
Paladin III (NY City), L.P.	2008	20,000,000	26,250,696	20,136,103	33,325,515	2.04	12.9%
Riverstone/Carlyle Global Energy & Power Fund IV	2008	32,500,000	35,237,315	35,821,470	2,112,174	1.08	2.1%
Yucaipa American Alliance Fund II, L.P.	2008	75,000,000	103,942,343	100,035,531	65,783,736	1.60	8.5%
Yucaipa Corporate Initiatives Fund II, L.P.	2008	35,000,000	32,157,997	19,205,889	6,662,359	0.80	-3.2%
Lincolnshire Equity Fund IV, L.P.	2009	12,500,000	12,766,164	14,803,288	4,960,511	1.55	10.0%
Welsh, Carson, Anderson & Stowe XI, L.P.	2009	30,000,000	30,000,000	39,096,063	8,680,012	1.59	11.4%
JP Morgan Fleming (Tranche B), L.P.	2010	10,000,000	10,459,178	8,553,930	8,030,764	1.59	9.8%
Trident V, L.P.	2010	35,000,000	41,083,855	46,387,907	19,704,400	1.61	10.7%
American Securities Partners VI, L.P.	2011	100,000,000	107,262,584	161,150,007	44,067,125	1.91	20.7%
Ampersand 2011, L.P.	2011	17,500,000	17,500,000	32,282,507	21,292,478	3.06	21.7%
AXA Secondary Fund V L.P.	2011	160,000,000	85,770,811	131,512,751	718,927	1.54	13.6%
BC European Capital IX, L.P.	2011	70,662,680	73,651,472	69,745,599	41,488,760	1.51	11.4%
Blackstone Capital Partners VI, L.P.	2011	60,000,000	61,630,358	49,811,420	34,103,456	1.36	8.2%
EQT VI, L.P.	2011	48,527,255	51,780,306	71,616,976	14,439,545	1.66	13.3%
Pegasus Partners V, L.P.	2011	20,789,916	25,736,779	15,150,824	20,930,897	1.40	8.6%
Vista Equity Partners IV, L.P.	2011	100,000,000	99,124,333	127,736,598	60,107,254	1.90	16.0%
Ares Corporate Opportunities Fund IV, L.P.	2012	105,000,000	115,056,814	105,453,196	66,029,721	1.49	11.8%

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

Alternative Assets Manager Performance Detail



Through March 31, 2020

	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Green Equity Investors VI, L.P.	2012	100,000,000	108,732,073	78,185,527	99,364,065	1.63	13.7%
<i>NYCTRS - 2012 Emerging Manager Program</i>	<i>2012</i>	<i>158,050,000</i>	<i>161,972,316</i>	<i>88,168,108</i>	<i>156,608,309</i>	<i>1.51</i>	<i>14.1%</i>
Platinum Equity Capital Partners III, L.P.	2012	115,000,000	114,323,847	158,586,881	44,332,925	1.77	34.9%
Trilantic Capital Partners V (North America), L.P.	2012	70,000,000	73,756,503	70,895,356	37,612,371	1.47	15.2%
Warburg Pincus Private Equity XI, L.P.	2012	175,000,000	180,494,305	187,597,131	87,978,257	1.53	11.5%
Apollo Investment Fund VIII, L.P.	2013	200,000,000	185,829,645	90,804,670	137,165,239	1.23	7.2%
Carlyle Partners VI, L.P.	2013	125,000,000	131,890,745	57,767,433	108,039,251	1.26	8.0%
Crestview Partners III (Co-Investment B), L.P.	2013	25,000,000	25,908,372	1,253,803	21,675,489	0.89	-4.5%
Crestview Partners III, L.P.	2013	75,000,000	52,792,989	31,983,832	33,706,381	1.24	9.1%
Landmark Equity Partners XV, L.P.	2013	113,000,000	85,861,623	63,781,912	48,445,933	1.31	12.6%
Landmark Equity Partners XV, L.P. - Side Car	2013	37,000,000	32,486,011	24,105,392	26,463,232	1.56	19.5%
ASF VI NYC Co-Invest, L.P.	2014	38,000,000	29,637,257	29,465,779	12,205,875	1.41	11.8%
ASF VI, L.P.	2014	112,000,000	88,126,972	93,969,987	27,296,406	1.38	11.4%
Carlyle Partners VI, L.P. - Side Car	2014	13,750,000	10,002,052	581,000	8,406,383	0.90	-2.7%
CVC Capital Partners VI, L.P.	2014	204,780,195	177,368,195	86,091,740	179,556,874	1.50	15.3%
Lexington Capital Partners VIII, L.P.	2014	150,000,000	134,538,011	72,073,000	102,594,358	1.30	15.1%
Olympus Growth Fund VI, L.P.	2014	100,000,000	95,043,423	49,357,521	70,530,917	1.26	10.2%
Vista Equity Partners Fund V, L.P.	2014	125,000,000	152,724,737	150,243,916	123,792,608	1.79	20.3%
American Securities Partners VII, L.P.	2015	111,000,000	96,267,957	15,370,130	60,037,937	0.78	-12.0%
ASF VII B NYC Co-Invest, L.P.	2015	67,000,000	35,089,918	10,467,356	46,427,159	1.62	27.5%
ASF VII, L.P.	2015	134,000,000	74,999,602	16,713,836	73,091,928	1.20	12.4%
Bridgepoint Europe V Co-Invest	2015	25,274,152	23,501,286	10,320,394	29,915,703	1.71	24.7%
Bridgepoint Europe V, L.P.	2015	88,303,588	83,099,287	30,487,602	76,302,643	1.29	11.7%
Centerbridge Capital Partners III, L.P.	2015	33,500,000	27,491,211	11,815,106	24,988,958	1.34	14.1%
<i>NYCTRS - 2015 Emerging Manager Program</i>	<i>2015</i>	<i>198,500,000</i>	<i>109,360,431</i>	<i>18,730,126</i>	<i>110,204,577</i>	<i>1.18</i>	<i>31.0%</i>
Siris Partners III, L.P.	2015	45,000,000	45,988,657	21,079,210	37,077,534	1.26	12.2%
Welsh, Carson, Anderson & Stowe XII, L.P.	2015	110,500,000	99,028,772	57,441,286	95,109,640	1.54	21.4%
Apax IX USD, L.P.	2016	178,000,000	164,386,512	4,680,693	198,553,444	1.24	15.2%
Platinum Equity Capital Partners IV, L.P.	2016	156,000,000	139,614,716	43,094,625	107,262,082	1.08	5.4%
Vista Equity Partners Fund VI, L.P.	2016	223,000,000	247,728,961	58,038,886	270,299,191	1.33	13.2%
Ares Corporate Opportunities Fund V, L.P.	2017	134,000,000	115,432,561	14,365,655	101,550,171	1.00	0.3%
BC European Capital X Metro Co-Investment L.P.	2017	50,878,512	47,009,927	320,286	51971569.21	1.11	7.2%
BC European Capital X, L.P.	2017	125,492,897	107,395,631	2,098,531	105,953,544	1.01	0.5%
Green Equity Investors VII, L.P.	2017	134,000,000	103,991,343	1,200,328	117,459,737	1.14	8.3%

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

Alternative Assets Manager Performance Detail



Through March 31, 2020

	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
KKR Americas Fund XII, L.P.	2017	223,000,000	106,821,884	1,470,200	112,278,358	1.06	4.4%
Palladium Equity Partners V, L.P.	2017	26,666,667	8,907,683	89,065	7,141,380	0.81	-27.9%
Apollo Investment Fund IX, L.P.	2018	256,000,000	46,517,629	477,463	41,913,758	0.91	NM
Bridgepoint Europe VI Co-Invest	2018	23,626,403	5,559,174	-	4,676,137	0.84	NM
Bridgepoint Europe VI, L.P.	2018	94,263,587	18,537,442	-	16,388,215	0.88	NM
CVC Capital Partners VII, L.P.	2018	151,599,179	76,421,203	1,072,202	74,677,478	0.99	NM
EQT VIII SCSP	2018	84,847,821	38,673,891	1,075,460	40,843,718	1.08	NM
EQT VIII SCSP (Co-Invest)	2018	31,451,593	17,395,185	-	18,531,160	1.07	NM
Platinum Equity Capital Partners IV, L.P. (Co-Invest)	2018	22,000,000	15,429,959	3,069,976	10,893,222	0.90	NM
Platinum Equity Small Cap Fund, L.P.	2018	32,500,000	7,383,426	81,315	2,581,869	0.36	NM
Siris Partners IV, L.P.	2018	71,000,000	32,654,905	-	26,813,478	0.82	NM
Vista Equity Partners Fund VII, L.P.	2018	142,000,000	35,841,664	109,340	33,329,071	0.93	NM
Apax X, L.P.	2019	95,000,000	-	-	(1,632,817)	N/A	N/A
ASF VIII B NYC Co-Invest, L.P.	2019	79,000,000	3,363,615	-	5,279,059	1.57	NM
ASF VIII, L.P.	2019	158,000,000	37,496,458	463	39,919,450	1.06	NM
Blackstone Capital Partners VIII, L.P.	2019	99,000,000	-	-	(147,422)	N/A	N/A
Crestview Partners IV (FF), L.P.	2019	19,000,000	0	-	30,785	N/A	N/A
Crestview Partners IV, L.P.	2019	57,000,000	-	-	14,550	N/A	N/A
ICG Strategic Equity Fund III LP	2019	41,111,763	367,758	-	1,041,896	2.83	N/A
KKR European Fund V, L.P. - USD	2019	89,000,000	10,131,866	-	6,996,301	0.69	NM
LCP IX Co-Invest Partners B, L.P.	2019	28,375,000	-	-	(26,828)	N/A	N/A
Lexington Capital Partners IX, L.P.	2019	85,125,000	6,028,550	1,074,094	8,810,173	1.64	NM
Lindsay Goldberg V, L.P.	2019	79,000,000	-	-	0	N/A	N/A
<u>NYCTRS - 2019 Emerging Manager Program</u>	<u>2019</u>	<u>240,000,000</u>	<u>12,180,539</u>	<u>673,789</u>	<u>12,337,152</u>	<u>1.07</u>	<u>NM</u>
Platinum Equity Capital Partners V, L.P.	2019	142,000,000	16,200,636	-	12,180,346	0.75	NM
Trilantic Capital Partners VI (North America), L.P.	2019	46,000,000	9,229,441	10,102	6,742,731	0.73	NM
Warburg Pincus Global Growth, L.P.	2019	114,000,000	21,499,073	85,500	19,788,150	0.92	NM
WCAS XIII, L.P.	2019	71,000,000	4,440,363	-	2,223,782	0.50	NM
Clearlake Capital Partners VI, L.P.	2020	42,000,000	-	-	-	N/A	N/A
FTV VI, L.P.	2020	24,000,000	1,920,000	-	1,825,239	0.95	NM
Green Equity Investors VIII Coinvest N, L.P.	2020	33,000,000	-	-	-	N/A	N/A
Green Equity Investors VIII, L.P.	2020	99,000,000	-	-	-	N/A	NM
PECP V Co-Investment, L.P.	2020	35,500,000	-	-	0	N/A	N/A

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

Alternative Assets Manager Performance Detail



Through March 31, 2020

	Vintage Year	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
TOTAL PRIVATE REAL ESTATE			5,791,535,981	4,091,364,963	2,351,238,313	2,988,119,286	1.31	7.3%
TOTAL PRIVATE REAL ESTATE								
JP Morgan Strategic Property Fund	2006	Core Portfolio	86,000,000	131,680,257	90,401,021	151,221,467	1.83	7.6%
PRISA	2006	Core Portfolio	36,000,000	38,793,503	16,428,708	52,159,158	1.77	4.9%
Prologis Targeted US Logistics Fund	2006	Core Portfolio	10,000,000	13,816,146	5,206,354	21,092,006	1.90	6.3%
RREEF America REIT II	2006	Core Portfolio	36,000,000	47,527,452	26,231,915	53,438,316	1.68	5.3%
UBS Trumbull Property Fund	2006	Core Portfolio	106,000,000	164,212,762	170,652,169	80,059,325	1.53	6.3%
Heitman America Real Estate Trust, L.P.	2007	Core Portfolio	48,000,000	81,913,194	33,913,194	104,455,788	1.69	7.0%
JP Morgan Special Situation Property Fund	2007	Core Portfolio	15,000,000	24,708,667	13,997,992	22,295,450	1.47	4.8%
PRISA II	2007	Core Portfolio	63,374,139	67,585,272	24,740,901	98,162,328	1.82	5.8%
LaSalle Property Fund	2010	Core Portfolio	104,000,000	103,690,926	22,240,831	126,126,469	1.43	9.4%
Almanac Realty Securities VI	2012	Core Portfolio	100,000,000	62,409,719	68,779,049	12,596,875	1.30	9.7%
Almanac Realty Securities VI (Sidecar III)	2012	Core Portfolio	35,000,000	11,751,378	10,959,011	4,558,329	1.32	9.7%
NYC Asset Investor #2	2013	Core Portfolio	145,000,000	147,467,377	62,588,614	107,317,273	1.15	3.6%
MetLife Core Property Fund	2014	Core Portfolio	80,000,000	80,000,000	19,497,778	102,728,691	1.53	9.1%
Almanac Realty Securities VII	2015	Core Portfolio	65,000,000	52,484,831	42,894,118	26,611,982	1.32	12.9%
Almanac Realty Securities VII (Sidecar III)	2015	Core Portfolio	20,000,000	12,111,124	10,017,361	7,299,674	1.43	16.4%
USAA Eagle Real Estate Fund	2015	Core Portfolio	98,000,000	107,724,753	9,734,260	122,481,308	1.23	7.3%
Artemis Co-Investment	2016	Core Portfolio	70,000,000	80,327,830	31,612,407	66,617,629	1.22	13.9%
Brookfield Premier Real Estate Partners	2016	Core Portfolio	119,000,000	135,043,871	16,043,871	164,234,200	1.33	10.7%
Exeter Core Industrial Club Fund II	2016	Core Portfolio	37,000,000	35,557,000	5,626,384	37,007,670	1.20	9.8%
Jamestown Premier Property Fund	2016	Core Portfolio	64,961,594	68,878,768	27,564,009	54,485,768	1.19	7.3%
Carlyle Property Investors	2017	Core Portfolio	119,000,000	131,442,965	12,442,965	140,257,701	1.16	6.9%
Lion Industrial Trust	2017	Core Portfolio	98,000,000	110,995,055	12,995,057	146,325,325	1.44	15.2%
Almanac Realty Securities VIII	2018	Core Portfolio	51,000,000	6,273,289	368,970	4,559,774	0.79	-39.9%
Almanac Realty Securities VIII (Sidecar II)	2018	Core Portfolio	34,000,000	3,995,312	148,087	3,592,518	0.94	-11.7%
Artemis Income and Growth Fund	2018	Core Portfolio	101,000,000	19,906,072	26,268	18,206,569	0.92	NM
Heitman Core Real Estate Debt Income Trust	2018	Core Portfolio	112,000,000	63,793,150	4,793,150	63,958,669	1.08	6.6%
Exeter Core Industrial Fund III	2019	Core Portfolio	84,800,000	9,752,000	-	8,295,352	0.85	NM
Harrison Street Core Property Fund	2019	Core Portfolio	100,000,000	101,587,037	1,587,037	103,244,142	1.03	NM
Harrison Street Core Property Fund Co-Investment	2019	Core Portfolio	50,000,000	31,993,822	443,926	32,832,343	1.04	NM
Blackstone Real Estate Partners IV L.P.	2004	Non-Core Portfolio	25,000,000	31,994,609	44,369,069	730,468	1.41	10.1%
The City Investment Fund I	2004	Non-Core Portfolio	120,000,000	118,337,757	119,671,892	190,780	1.01	0.3%
Canyon-Johnson Urban II	2005	Non-Core Portfolio	30,000,000	26,966,111	11,923,957	99,839	0.45	-10.4%
Apollo Real Estate Investment Fund V	2006	Non-Core Portfolio	5,000,000	5,000,000	5,714,053	103,451	1.16	1.9%
American Value Partners Fund I	2007	Non-Core Portfolio	25,000,000	17,872,806	18,806,245	1,599,816	1.14	2.8%
Blackstone Real Estate Partners VI L.P.	2007	Non-Core Portfolio	50,000,000	54,622,277	108,618,554	577,386	2.00	13.4%
Carlyle Realty Partners V, L.P.	2007	Non-Core Portfolio	15,000,000	19,046,531	25,100,362	2,483,980	1.45	8.7%
Metropolitan Workforce Housing Fund	2007	Non-Core Portfolio	10,500,000	10,509,770	12,558,389	196,293	1.21	3.9%
Thor Urban Property Fund II	2007	Non-Core Portfolio	12,500,000	17,123,783	17,119,140	3,249,495	1.19	5.1%

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Alternative Assets Manager Performance Detail



Through March 31, 2020

	Vintage Year	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
Blackstone Real Estate Partners Europe III - USD	2008	Non-Core Portfolio	50,000,000	42,772,486	71,180,295	2,249,851	1.72	16.1%
Capri Urban Investors	2008	Non-Core Portfolio	40,000,000	40,000,000	18,350,614	9,432,322	0.69	-4.9%
Silverpeak Legacy Partners III	2008	Non-Core Portfolio	30,000,000	12,290,216	4,084,354	1,306,782	0.44	-12.2%
Stockbridge Real Estate III	2008	Non-Core Portfolio	22,500,000	22,498,458	14,024,794	12,269,867	1.17	2.2%
Westbrook Real Estate Fund VIII, L.P.	2009	Non-Core Portfolio	50,000,000	59,690,192	68,952,803	8,009,920	1.29	10.5%
Carlyle Realty Partners VI, L.P.	2011	Non-Core Portfolio	70,000,000	75,710,683	107,928,686	6,065,398	1.51	20.4%
H/2 Special Opportunities Fund II	2011	Non-Core Portfolio	40,000,000	40,045,335	58,344,882	1,045,799	1.48	13.4%
Brookfield Strategic Real Estate Partners	2012	Non-Core Portfolio	125,000,000	131,188,287	165,053,067	42,172,983	1.58	14.3%
Taconic New York City Investment Fund	2012	Non-Core Portfolio	70,000,000	29,272,728	47,515,256	4,762,846	1.79	15.9%
Lone Star Real Estate Fund III	2013	Non-Core Portfolio	190,000,000	181,714,995	224,404,418	18,474,234	1.34	14.1%
NYC Asset Investor #1	2013	Non-Core Portfolio	60,000,000	68,495,917	32,997,449	47,952,127	1.18	4.2%
NYC Asset Investor #3	2013	Non-Core Portfolio	96,000,000	63,262,892	11,114,707	76,220,290	1.38	9.3%
Carlyle Realty Partners VII, L.P.	2014	Non-Core Portfolio	120,000,000	109,187,757	100,021,811	50,275,487	1.38	13.5%
DivcoWest Fund IV	2014	Non-Core Portfolio	25,000,000	24,750,416	37,848,142	3,376,427	1.67	25.5%
DRA Growth and Income Fund VIII	2014	Non-Core Portfolio	75,000,000	91,692,603	68,805,838	52,358,109	1.32	11.0%
H/2 Special Opportunities Fund III	2014	Non-Core Portfolio	65,000,000	65,000,000	57,415,260	17,363,592	1.15	5.7%
Avanath Affordable Housing Fund II	2015	Non-Core Portfolio	10,000,000	10,239,780	3,187,627	13,239,467	1.60	11.8%
Tristan European Property Investors Special Opp IV	2015	Non-Core Portfolio	65,249,412	54,643,780	7,038,318	55,663,634	1.15	6.7%
DivcoWest Fund V	2016	Non-Core Portfolio	78,000,000	51,942,016	1,508,183	56,106,177	1.11	5.8%
Exeter Industrial Value Fund IV, L.P.	2016	Non-Core Portfolio	34,000,000	28,900,000	-	30,792,811	1.07	4.6%
H/2 Special Opportunities Fund IV	2016	Non-Core Portfolio	119,000,000	77,360,209	968,067	45,105,350	0.60	-63.0%
Pramerica Real Estate Capital VI	2016	Non-Core Portfolio	67,849,703	57,936,519	29,118,872	36,350,501	1.13	12.2%
PW Real Estate Fund III	2016	Non-Core Portfolio	65,218,976	43,959,068	18,166,348	55,837,654	1.68	27.5%
Westbrook Real Estate Fund X	2016	Non-Core Portfolio	47,000,000	40,525,046	20,512,276	26,094,267	1.15	11.0%
Basis Investment Group Real Estate Fund I	2017	Non-Core Portfolio	19,400,000	13,434,430	4,680,198	10,468,140	1.13	11.4%
DRA Growth and Income Fund IX	2017	Non-Core Portfolio	56,000,000	56,643,405	15,929,758	50,484,589	1.17	12.9%
NYCRS-KKR CMBS Retention Partners	2017	Non-Core Portfolio	159,000,000	142,136,895	22,776,766	130,757,570	1.08	4.6%
Aermont Capital Real Estate Fund IV	2018	Non-Core Portfolio	81,802,157	14,051,631	-	4,854,501	0.35	NM
Brookfield Strategic Real Estate Partners III, L.P.	2018	Non-Core Portfolio	193,000,000	59,809,800	8,239,483	51,296,753	1.00	NM
KKR Real Estate Partners Americas II	2018	Non-Core Portfolio	135,380,000	82,341,599	24,092,326	75,018,534	1.20	20.3%
Blackstone Real Estate Partners Europe VI L.P.	2019	Non-Core Portfolio	111,000,000	7,478,935	-	6,759,414	0.90	NM
Blackstone Real Estate Partners IX L.P.	2019	Non-Core Portfolio	184,000,000	33,141,973	1,160,648	30,801,089	0.96	NM
GreenOak Asia III	2019	Non-Core Portfolio	99,000,000	-	-	(661,834)	0.00	NM
Grosvenor Real Estate Emerging Manager SMA	2019	Non-Core Portfolio	264,000,000	-	-	-	0.00	NM
Westbrook Real Estate Fund XI	2019	Non-Core Portfolio	92,000,000	-	-	(80,670)	0.00	NM
DivcoWest Fund VI	2020	Non-Core Portfolio	93,000,000	-	-	(504,108)	0.00	NM
DRA Growth and Income Fund X	2020	Non-Core Portfolio	67,000,000	10,349,737	-	10,945,806	1.06	NM
Exeter Industrial Value Fund V, L.P.	2020	Non-Core Portfolio	56,000,000	-	-	-	0.00	NM
KKR Real Estate Partners Europe II	2020	Non-Core Portfolio	89,000,000	-	-	-	0.00	NM
Pramerica Real Estate Capital VII	2020	Non-Core Portfolio	96,000,000	-	-	-	0.00	NM

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

Alternative Assets Manager Performance Detail



Through March 31, 2020

	Vintage Year	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
TOTAL INFRASTRUCTURE		1,621,715,919	1,075,432,012	291,765,491	1,040,118,575	1.24	10.3%
TOTAL INFRASTRUCTURE INVESTMENTS							
Brookfield Infrastructure Fund II, L.P.	2013	140,000,000	113,817,851	47,495,803	132,182,577	1.58	11.8%
Global Energy & Power Infrastructure Fund II	2014	90,000,000	90,926,748	69,306,363	56,563,204	1.38	25.9%
IFM Global Infrastructure Fund	2014	140,000,000	196,505,133	81,463,179	188,679,921	1.37	9.4%
KKR Global Infrastructure Investors II L.P.	2014	100,000,000	102,821,364	27,860,605	125,032,421	1.49	16.5%
Actis Energy 4	2016	72,600,000	48,117,642	6,893,600	51,860,000	1.22	13.2%
Brookfield Infrastructure Fund III, L.P.	2016	119,000,000	65,864,294	15,262,366	60,528,568	1.15	8.3%
Global Infrastructure Partners III-A/B, L.P.	2016	139,000,000	114,042,439	15,420,177	99,398,484	1.01	0.3%
ASF VII Infrastructure L.P.	2017	65,000,000	28,323,660	2,856,789	29,577,933	1.15	15.2%
Axiom Infrastructure North America	2017	66,030,248	67,150,208	7,737,927	64,183,465	1.07	5.3%
EQT Infrastructure III (No.2) SCSp	2017	63,416,178	64,671,802	9,850,353	65,820,236	1.17	11.3%
NYCRS EIG Energy Partners, L.P.	2017	64,710,000	18,162,826	2,331,300	17,082,763	1.07	6.0%
Cardinal NR Sidecar Holdings L.P.	2018	9,000,000	9,055,425	969,453	9,752,041	NM	NM
Global Energy & Power Infrastructure Fund III, L.P.	2018	75,000,000	16,722,194	952,686	13,519,277	NM	NM
KKR Global Infrastructure Investors III L.P.	2018	75,000,000	27,647,509	554,063	24,045,412	0.89	-18.2%
NYCRS EIG Energy Partners Co-Investment, L.P.	2018	16,180,000	-	-	-	-	0.0%
Ardian Infrastructure Fund V B	2019	71,479,494	14,070,928	350,861	13,073,589	NM	NM
Brookfield Infrastructure Fund IV (BIF IV): Co-invest	2019	10,000,000	10,000,000	-	10,307,275	NM	NM
Brookfield Infrastructure Fund IV, L.P.	2019	97,000,000	36,245,099	401,328	33,487,320	NM	NM
EQT Infrastructure IV (No.2) USD SCSp	2019	87,000,000	41,164,700	2,058,640	36,933,428	NM	NM
EQT Infrastructure IV Co-Investment (Saber)	2019	8,100,000	8,162,308	-	8,100,000	NM	NM
Global Infrastructure Partners IV-A/B, L.P.	2019	113,200,000	1,959,883	-	(9,338)	NM	NM

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

Alternative Assets Manager Performance Detail



Through June 30, 2020

	Vintage Year	Commitment - Closing (Base)	Contributions Cumulative (Local)	Distributions Cumulative	Final Market Value	3 Month Base%	Inception IRR%
TOTAL OPPORTUNISTIC FIXED INCOME		2,848,850,817	3,313,961,957	1,539,019,394	2,447,264,137	5.44%	5.87%
Avenue Special Situations Fund V, L.P.	2007	25,261,658	25,650,392	33,533,622	-		NM
Avenue Europe Special Sit. Fund, L.P.	2008	20,589,159	18,559,393	35,192,684	-		NM
PIMCO DiSCO Fund, L.P.	2008	150,000,000	150,427,750	204,457,599	-		11.23%
Torchlight Debt Opportunity Fund III, LLC	2009	50,000,000	53,306,159	79,307,054	-		13.36%
Avenue Special Situations Fund VI (A), L.P.	2011	70,000,000	71,766,544	71,272,284	4,804,822	0.81%	1.34%
GoldenTree Managed Account	2011	140,000,000	140,878,192	-	219,808,243	10.08%	6.13%
Marathon Centre Street Partnership, L.P. - Asset Class	2011	218,750,000	355,250,000	168,000,000	269,021,790	6.11%	4.70%
AG Centre Street Partnership, L.P. - CC Asset Class	2012	180,000,000	190,800,000	47,626,130	181,449,249	4.83%	3.84%
Apollo Centre Street Partnership, L.P.	2012	268,750,000	533,893,782	289,507,117	323,719,838	5.23%	5.37%
FCO MA Centre Street L.P.	2012	140,000,000	271,574,305	185,597,645	144,880,351	5.74%	7.27%
OHA Centre Street Partnership, L.P.	2012	175,000,000	244,955,346	69,955,346	259,184,162	10.63%	6.70%
Contrarian Centre Street Partnership, L.P. - Asset Class	2013	90,000,000	90,000,000	-	80,565,344	3.56%	-2.08%
Lone Star Fund VIII (U.S.), L.P.	2013	130,000,000	127,970,674	121,172,792	30,252,441	4.12%	9.35%
Oaktree Opportunities Fund IX, L.P.	2013	100,000,000	100,000,000	47,895,430	63,416,072	10.50%	2.12%
Ares Centre Street Partnership, L.P.	2014	140,000,000	140,000,000	-	202,034,471	3.14%	8.49%
Brightwood Capital Fund III, L.P.	2015	35,000,000	28,403,806	14,452,879	18,688,557	2.11%	4.06%
Torchlight Debt Opportunity Fund V, LP	2015	67,000,000	53,600,000	49,477,192	18,176,055	-0.26%	10.73%
Brightwood Capital Fund IV, LP	2016	87,500,000	83,125,000	7,817,186	74,094,951	-0.72%	-0.97%
ICG Centre Street Partnership, L.P.	2017	120,000,000	140,256,084	80,273,168	73,012,283	1.08%	8.26%
KKR OFI SMA	2017	294,000,000	224,994,326	27,988,214	218,510,080	7.15%	8.44%
Maranon Centre Street Partnership, L.P.	2018	112,000,000	95,898,791	2,811,639	87,551,801	-5.50%	-5.43%
FCO MA Centre Street II (TR) LP	2019	140,000,000	74,970,000	-	84,090,180	7.96%	49.45%
Torchlight Debt Fund VI, LP	2019	95,000,000	97,681,412	2,681,412	94,003,446	0.00%	-2.21%

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



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

Appendix D

Footnotes



Through June 30, 2020

- The Barclays Capital Aggregate (then known as the Lehman Brothers Aggregate) was used prior to 1/1/89. Effective 1/1/89, in the Government Sector, maturities of less than 5 years were dropped from the Salomon and Lehman indices. From that date until 7/1/99 the benchmark was the NYC Core + 5, from Lehman.
- Effective 7/1/94, the NYC Core + 5 Index includes BBB rated securities.
- Effective 7/1/99, the basis of the NYC Index was changed from Lehman Brothers to Salomon. Also effective 7/1/99, only Salomon indices have been used to compare all fixed income managers.
- Effective 4/1/03, the name of the benchmark provider was changed from Salomon to Citigroup.
- Effective 7/1/09, 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.
- Private market investment performance and valuations are generally reported with a quarter lag so data contained in this report does not reflect any impact from the COVID-19 outbreak.



Through June 30, 2020

General Notes

- Estimated management fees for public market investments are calculated on an accrual basis without adjustment for management fee caps. Alternative investment (Private Market) fees are recorded on a cash basis and are not inclusive of carried interest paid. Since not all alternative managers currently provide detailed fee disclosure, the alternative investment fees noted here are not comprehensive.
- Public Market returns are Net of Manager Fees for periods after January 2014 and Gross of investment advisory fees for other periods unless otherwise indicated.
- Public market excess returns for periods prior to 2014 are based on Gross performance.
- Private market investment performance and valuations are generally reported with a quarter lag so data contained in this report does not reflect any impact from the COVID-19 outbreak.

Page Specific

Pages 8 - 13 - Portfolio Asset Allocation

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

Pages 14 - 16 - Performance Attribution: Total Plan

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



Through June 30, 2020

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

The indexes and most recent policy weights are as follows:

U.S. Equity: Russell 3000 * 28.91%

International Developed (EAFE) Markets: MSCI World ex USA IMI Net * 9.85%

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

Emerging Markets: MSCI Custom TRS Emerging Markets (Net) * 9.43%

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

REITs: Dow Jones Real Estate Securities * 0.00%

Private Equity: Russell 3000 + 300 b.p. per annum * 5.36%

Private Real Estate – Core: NFI - ODCE Net * 2.47%

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

Infrastructure: CPI + 4% * 1.29%

US Treasury Short Term: FTSE USBIG Treasury 1-3Y * 7.00%

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

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

US Treasury Long Duration: FTSE Treasury 10+ * 7.61%

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

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

Mortgage: FTSE Mortgage Index * 5.83%



Through June 30, 2020

*ETI: ETI Custom Benchmark * 0.89%*

*Investment Grade Credit: NYC – Investment Grade Credit * 6.72%*

*High Yield: Bloomberg Barclays US High Yield 2% Issuer Capped * 5.51%*

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

*TIPS: BBG BARC Gbl Inf-Lk: US TIPS (Dly) * 3.68%*

*Convertible Bonds: ICE BofA All US Conv Ex Mandatory * 0.00%*

*Opportunistic Fixed: OFI - JPMGHY / CSFB 50/50 Blend Plus 300 b.p. per annum * 2.98%*

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):

Teachers' Retirement System - Economically Targeted Investments Quarterly Report

Public/Private Apartment Rehabilitation Program (PPAR)

Lenders*	BOA		CCD		CFSB		CPC		LIIF		NCBCI		NHS		WF		LISC		BE		HDC			
Contractual Commitment ¹	\$30.00		\$40.00		\$9.00		\$250.00		\$25.00		\$12.00		\$3.00		\$20.00		\$10.00		\$10.00		\$10.00			
Current Market Value ¹	\$9.03		\$32.02		\$2.09		\$142.33		\$15.47		\$1.54		\$0.21		\$2.83		\$1.28		\$2.47		\$0.00			
	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units		
Commitments Q2 (included in total)																								
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	1.97	70	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Total	\$0.00	0	\$0.00	0	\$0.00	0	\$1.97	70	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0
Delivered Q2 (included in total)																								
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	1.12	68	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	2.11	360	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	1.68	66	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Total	\$0.00	0	\$1.12	68	\$0.00	0	\$1.68	66	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$2.11	360	\$0.00	0	\$0.00	0
Total Commitments																								
Bronx	\$0.00	0	\$0.00	0	\$0.00	0	\$39.01	1,385	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$1.09	101	\$0.00	0	\$0.00	0
Brooklyn	0.00	0	1.36	0	0.00	0	14.61	1,093	1.11	95	0.00	0	0.00	0	2.49	130	2.45	156	0.00	0	0.00	0	0.00	0
Manhattan	0.00	0	0.00	0	0.46	39	13.38	423	2.76	174	0.00	0	0.00	0	3.88	103	2.39	65	2.04	83	0.00	0	0.00	0
Queens	0.00	0	0.00	0	0.00	0	4.39	152	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	7.04	333	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Total	\$0.00	0	\$1.36	0	\$0.46	39	\$78.42	3,386	\$3.87	269	\$0.00	0	\$0.00	0	\$6.37	233	\$4.84	221	\$3.13	184	\$0.00	0	\$0.00	0
Historical Investments																								
Bronx	\$1.75	60	\$14.08	802	\$0.00	0	\$71.43	5,060	\$3.11	178	\$0.00	0	\$0.00	0	\$1.13	90	\$1.09	48	\$0.00	0	\$0.00	0	\$0.00	0
Brooklyn	1.86	54	9.21	481	0.00	0	92.96	4,064	5.46	401	0.00	0	0.33	7	0.00	0	0.00	0	2.11	360	0.00	0	0.00	0
Manhattan	2.24	100	3.24	283	2.66	197	52.15	3,552	6.92	407	1.59	123	0.25	15	0.95	100	0.00	0	0.00	0	0.00	0	0.00	0
Queens	5.62	293	0.66	54	0.00	0	22.37	925	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	0.23	8	0.00	0	0.00	0	0.00	0	0.36	67	0.00	0	0.00	0	0.00	0	0.00	0
Outside of NYC	0.60	39	2.11	41	0.00	0	15.77	527	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Total	\$12.06	546	\$29.29	1,661	\$2.66	197	\$254.91	14,136	\$15.48	986	\$1.59	123	\$0.58	22	\$2.43	257	\$1.09	48	\$2.11	360	\$0.00	0	\$0.00	0

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

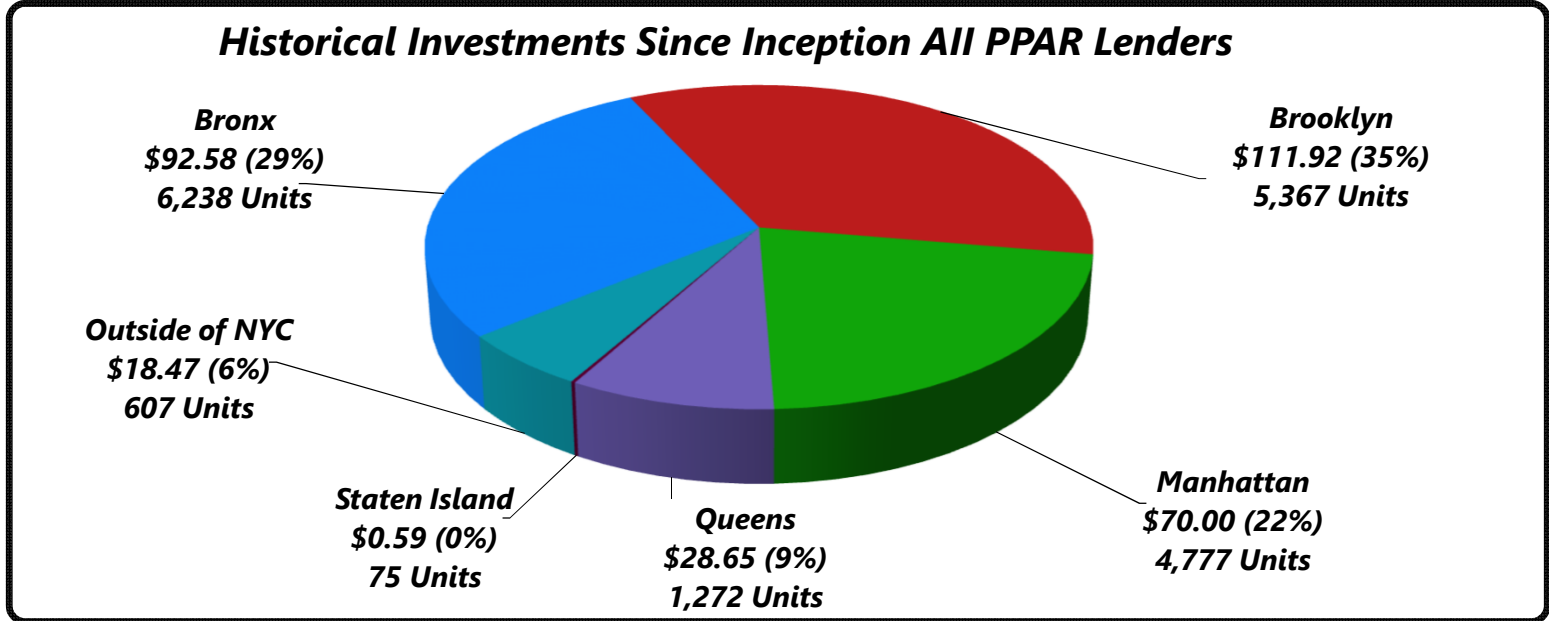
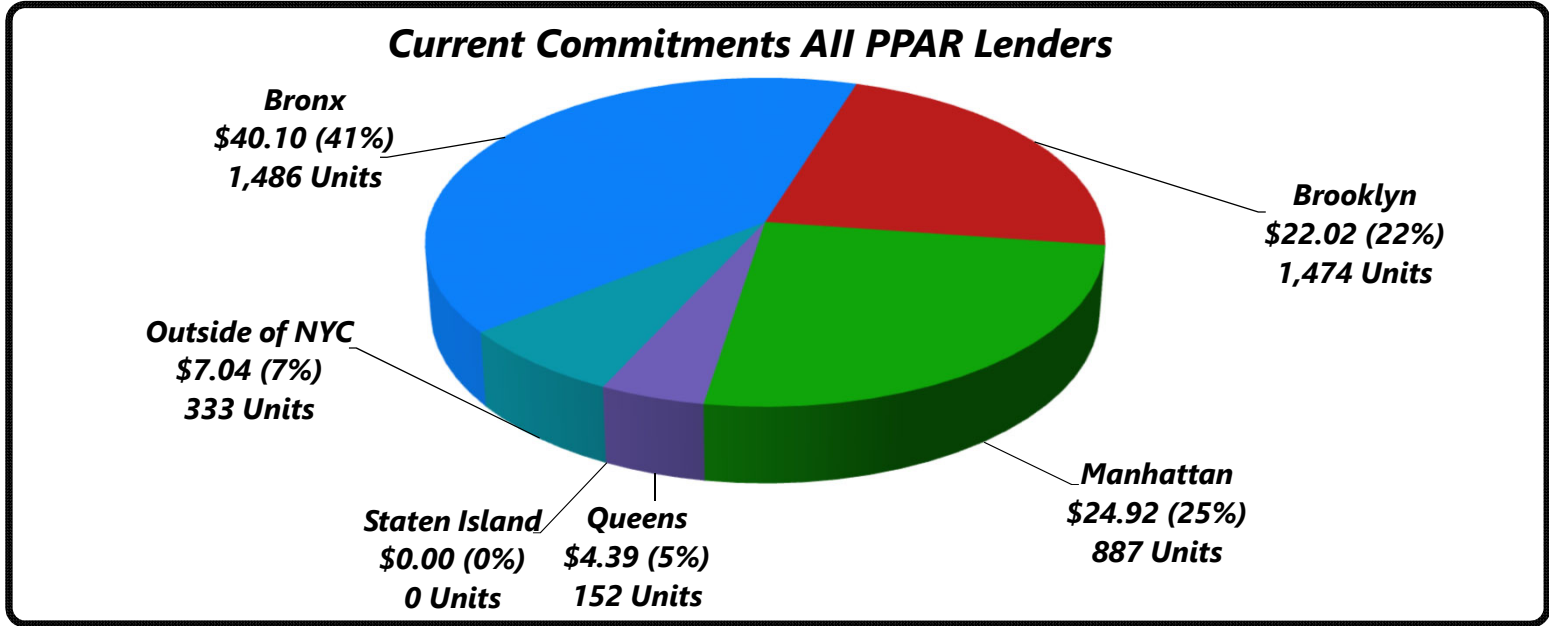
¹ Dollar amount listed in millions

Teachers' Retirement System - Economically Targeted Investments Quarterly Report

Public/Private Apartment Rehabilitation Program (PPAR)

Lenders*	All Lender Totals	
Contractual Commitment ¹	\$419.00	
Current Market Value ¹	\$209.28	
	Dollars	Units
Commitments Q2 (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	1.97	70
Total	\$1.97	70
Delivered Q2 (included in total)		
Bronx	\$0.00	0
Brooklyn	3.24	428
Manhattan	0.00	0
Queens	0.00	0
Staten Island	0.00	0
Outside of NYC	1.68	66
Total	\$4.92	494
Total Commitments		
Bronx	\$40.10	1,486
Brooklyn	22.02	1,474
Manhattan	24.92	887
Queens	4.39	152
Staten Island	0.00	0
Outside of NYC	7.04	333
Total	\$98.45	4,332
Historical Investments		
Bronx	\$92.58	6,238
Brooklyn	111.92	5,367
Manhattan	70.00	4,777
Queens	28.65	1,272
Staten Island	0.59	75
Outside of NYC	18.47	607
Total	\$322.21	18,336

¹ Dollar amount listed in millions

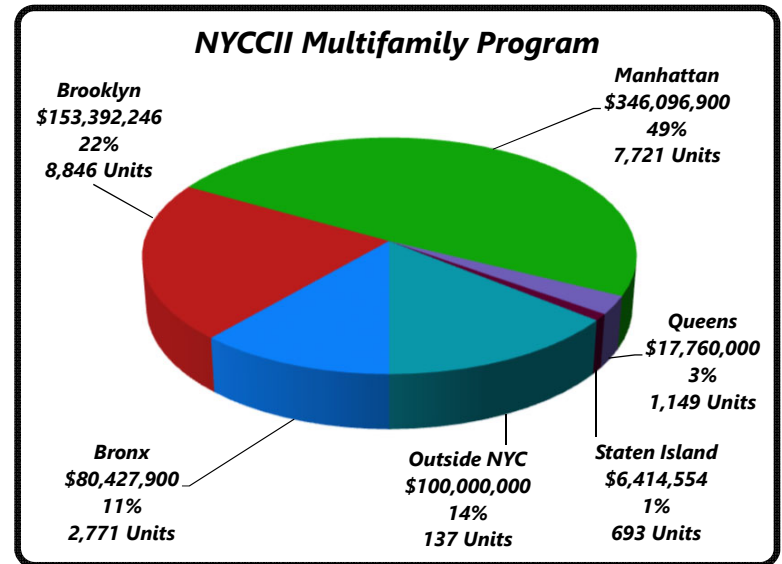


Teachers' Retirement System - Economically Targeted Investments Quarterly Report

AFL-CIO Housing Investment Trust (HIT)
Market Value \$323.44 million¹

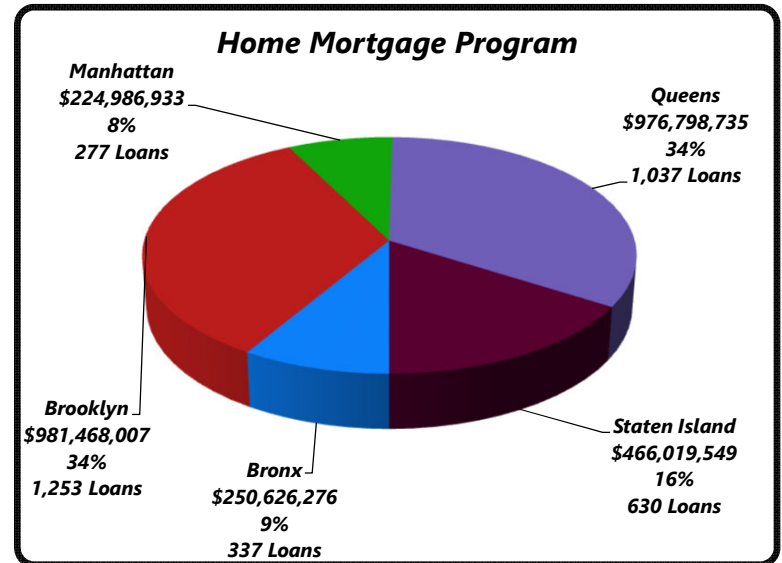
NYC Community Investment Initiative (NYCCII)

Borough	NYCCII Phase I: 2002 - 2005		NYCCII Phase II: 2006 - 2013		Grand Total	
	Investments	Units ²	Investments	Units ²	Investments	Units ²
Bronx	\$27,600,000	2,010	\$52,827,900	761	\$80,427,900	2,771
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
Total	\$249,123,500	12,148	\$454,968,100	9,169	\$704,091,600	21,317



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
Total	\$348,300,563	446	\$2,551,598,937	3,088	\$2,899,899,500	3,534



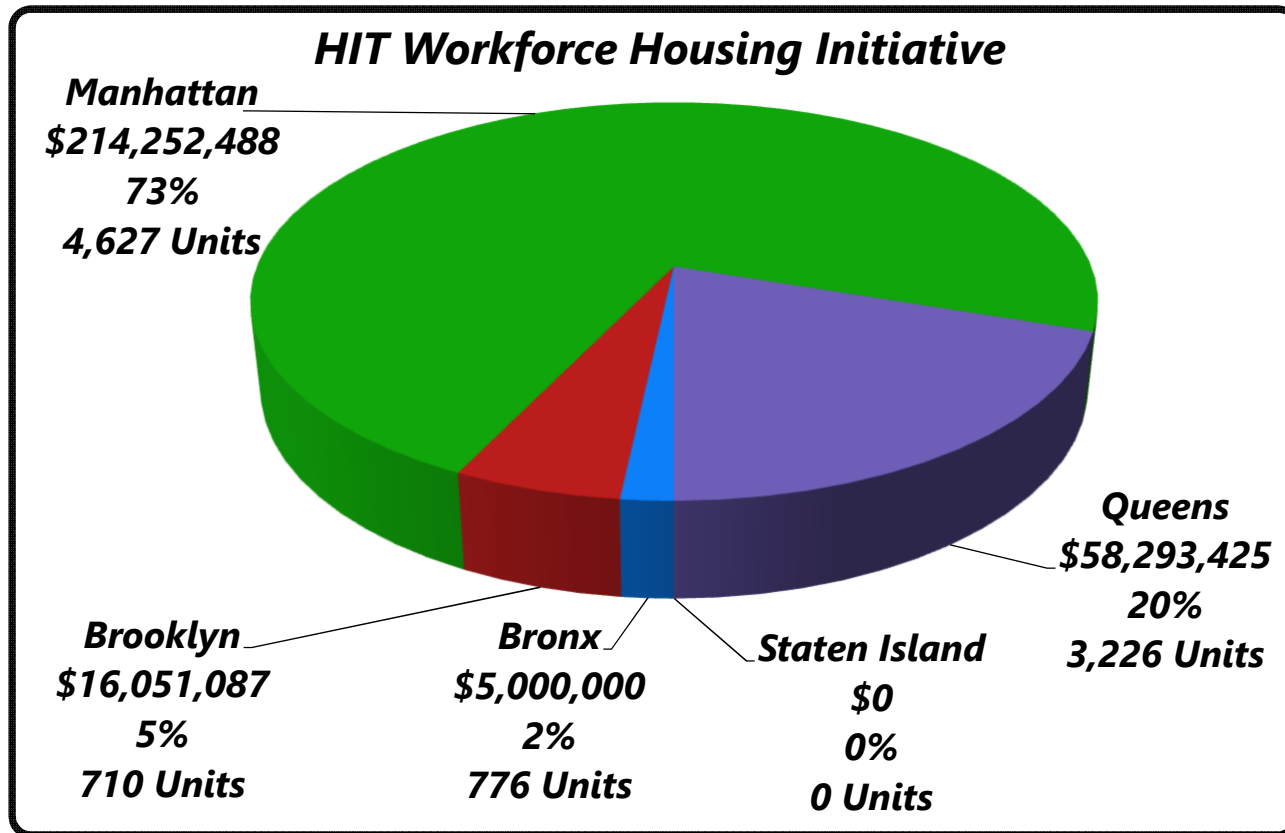
TEACHERS Loans	Phase I:	133	Phase II:	2,022	Total:	2,155
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¹Interest is reinvested

²Low/Moderate Income Units

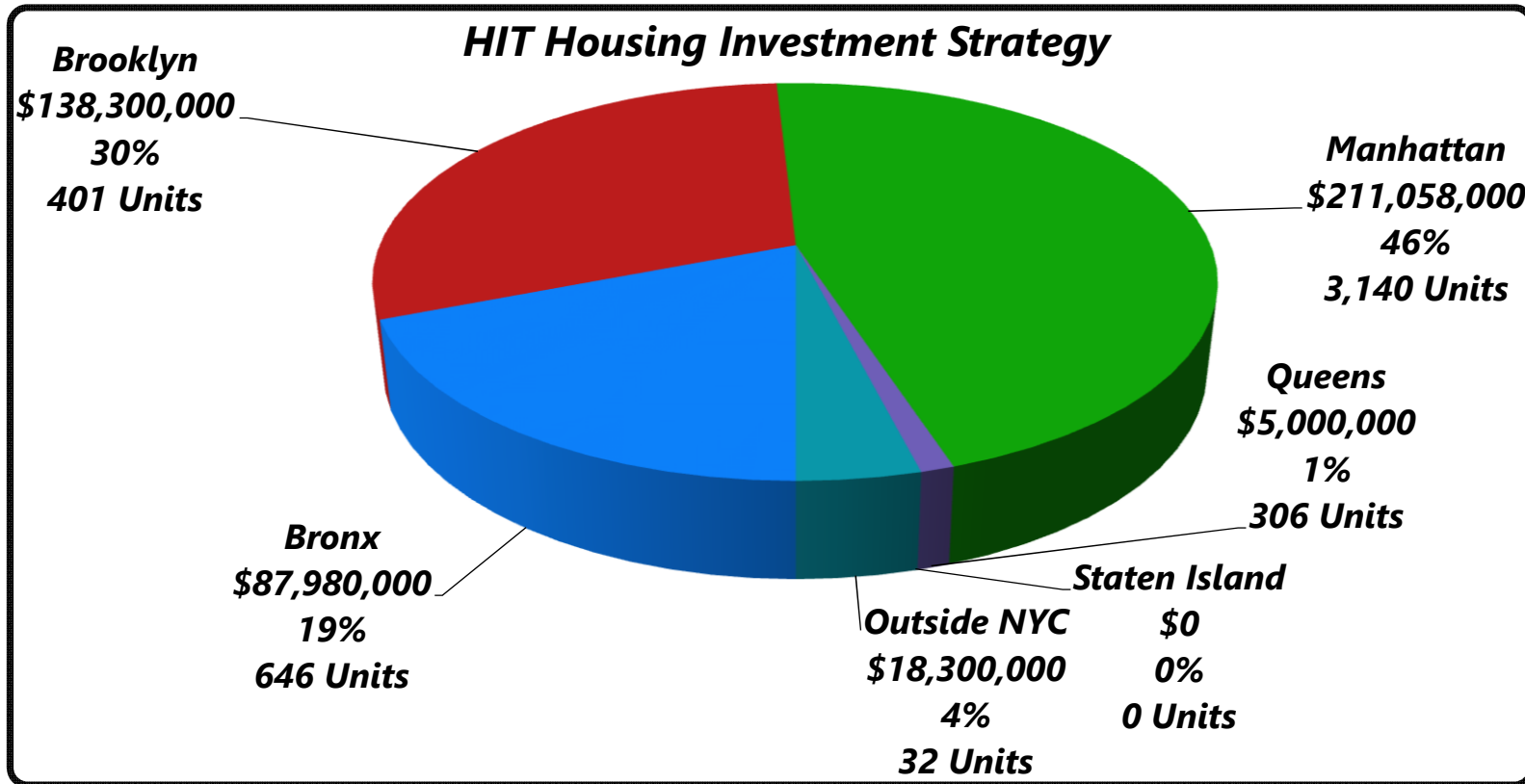
Teachers' Retirement System - Economically Targeted Investments Quarterly Report

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
Total	\$293,597,000	9,339



Teachers' Retirement System - Economically Targeted Investments Quarterly Report

AFL-CIO Housing Investment Trust (HIT)					
HIT Housing Investment Strategy: 2015 - Q2 2020					
<u>Borough</u>	<u>Q2 Investments</u>	<u>Investments</u>		<u>LMI Units</u>	
		<u>Since Inception</u>	<u>Q2 LMI Units</u>	<u>Since Inception</u>	
Bronx	\$0	\$87,980,000	0	646	
Brooklyn	0	138,300,000	0	401	
Manhattan	0	211,058,000	0	3,140	
Queens	0	5,000,000	0	306	
Staten Island	0	0	0	0	
Outside NYC	0	18,300,000	0	32	
Total	\$0	\$460,638,000	0	4,525	



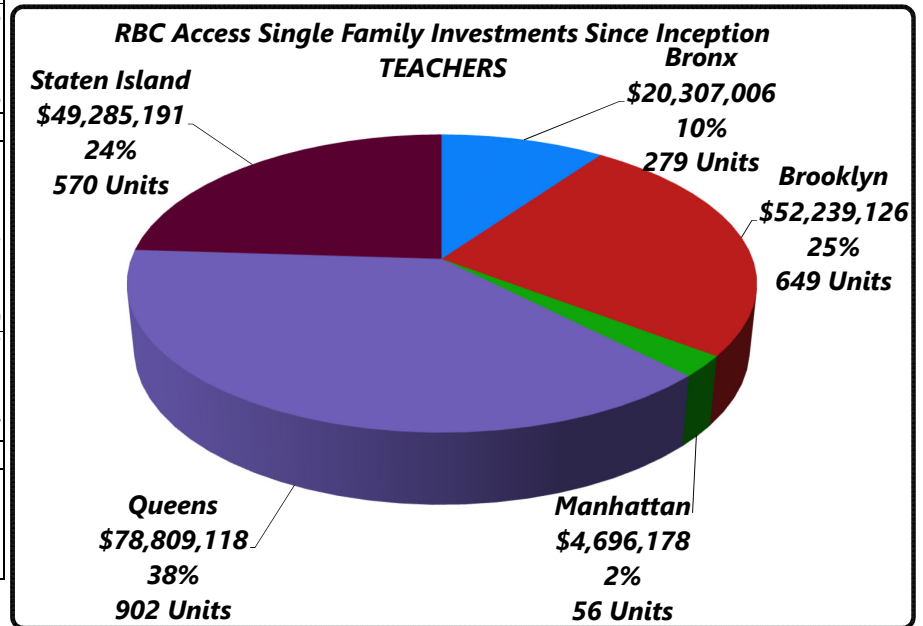
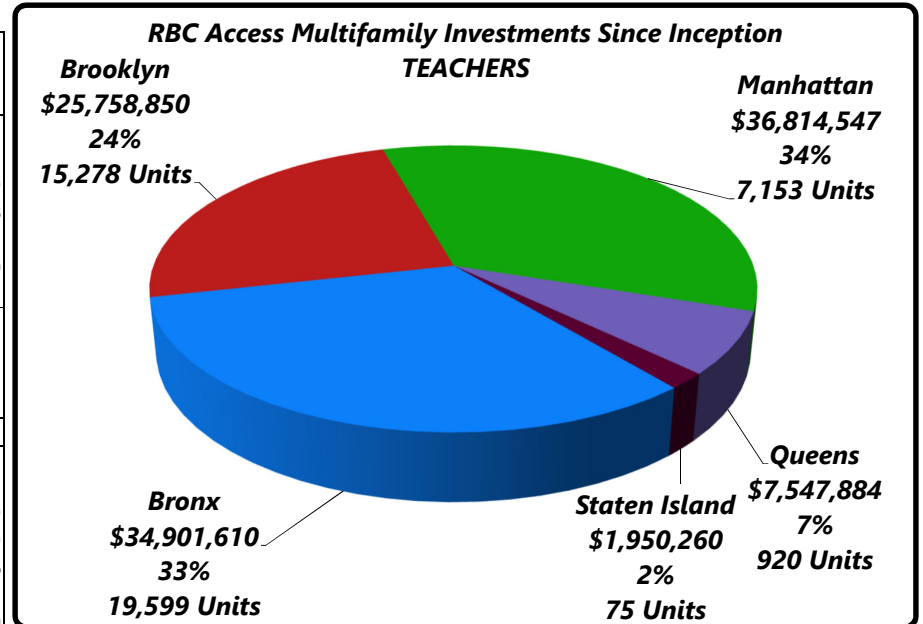
Teachers' Retirement System - Economically Targeted Investments Quarterly Report

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

\$157.5 million Allocated (35% of total account)					
Market Value \$155.54 million					
Multifamily Investments Detail					
	\$ Invested¹		Units²		
	Q2	Total	Q2	Total	
Bronx	\$0	\$34,901,610	0	19,599	
Brooklyn	0	25,758,850	0	15,278	
Manhattan	0	36,814,547	0	7,153	
Queens	0	7,547,884	0	920	
Staten Island	0	1,950,260	0	75	
Total TEACHERS Multifamily Investments	\$0	\$106,973,150	0	43,025	
Multifamily Total All Systems					
	\$0	\$305,637,572	0	43,025	
Single Family Investments Detail					
	\$ Invested		Units		
	Q2	Total	Q2	Total	
Bronx	\$396,918	\$20,307,006	3	279	
Brooklyn	1,177,332	52,239,126	8	649	
Manhattan	0	4,696,178	0	56	
Queens	406,175	78,809,118	3	902	
Staten Island	986,404	49,285,191	8	570	
Total TEACHERS Single Family Investments	\$2,966,829	\$205,336,619	22	2,456	
Single Family Total All Systems					
	\$8,476,655	\$586,676,054	22	2,456	
Other Investments Detail					
	\$ Invested		Loans		
	Q2	Total	Q2	Total	
Bronx	\$0	\$236,250	0	1	
Brooklyn	0	1,886,641	0	8	
Manhattan	0	851,517	0	5	
Queens	0	190,201	0	3	
Staten Island	0	0	0	0	
Total TEACHERS Other Investments	\$0	\$3,164,609	0	17	
Other Investments Total All Systems					
	\$0	\$9,041,740	0	17	
Grand Total TEACHERS					
	\$2,966,829	\$315,474,378			
Grand Total All Systems					
	\$8,476,655	\$901,355,365			

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

² If not indicated otherwise, superintendent units are allocated based on building size.



Teachers' Retirement System - Economically Targeted Investments Quarterly Report

Equity Investments

Total Market Value \$232.60 million

Hudson Market Value \$77.33 million

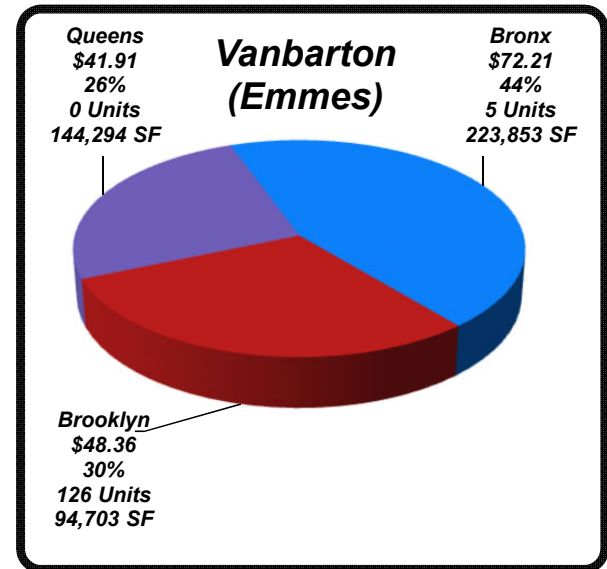
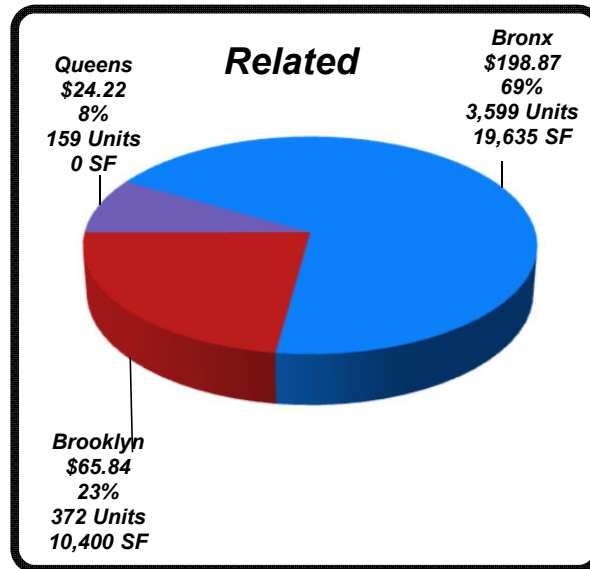
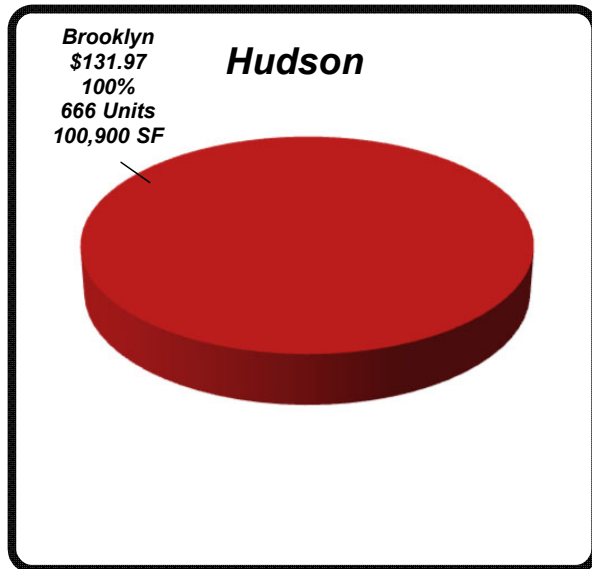
Borough	Gross			
	Capital Invested	Total Units	Workforce Units	Comm. SF
Bronx	\$0.00	0	0	0
Brooklyn	131.97	666	666	100,900
Manhattan	0.00	0	0	0
Queens	0.00	0	0	0
Staten Island	0.00	0	0	0
Outside NYC	0.00	0	0	0
Totals	\$131.97	666	666	100,900

Related Market Value \$107.32 million

Borough	Gross			
	Capital Invested	Total Units	Workforce Units	Comm. SF
Bronx	\$198.87	3,599	3,356	19,635
Brooklyn	65.84	372	212	10,400
Manhattan	0.00	0	0	0
Queens	24.22	159	151	0
Staten Island	0.00	0	0	0
Outside NYC	0.00	0	0	0
Totals	\$288.93	4,130	3,719	30,035

Vanbarton (Emmes) Market Value \$47.95 million

Borough	Gross			
	Capital Invested	Total Units	Workforce Units	Comm. SF
Bronx	\$72.21	5	2	223,853
Brooklyn	48.36	126	61	94,703
Manhattan	0.00	0	0	0
Queens	41.91	0	0	144,294
Staten Island	0.00	0	0	0
Outside NYC	0.00	0	0	0
Totals	\$162.48	131	63	462,850



*All information is derived from quarterly reports submitted by individual managers. Performance has not been reviewed by consultants or custodial bank.

**Dollar amount listed in millions

Private Equity Quarterly Report (Public):



Hamilton Lane®

Teachers' Retirement System of the City of New York – Public Material

First Quarter 2020 Report

Teachers' Retirement System of the City of New York
First Quarter 2020 Report

Content

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Appendix A – Glossary of Terms

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Teachers' Retirement System of the City of New York

First Quarter 2020 Report



Section 1:

Portfolio Update



Portfolio Snapshot

Hamilton Lane was engaged by the Teachers' Retirement System of the City of New York ("TRS") in October 2010 to provide alternative investment consulting services in accordance with the investment objectives of the TRS Private Equity portfolio (the "Portfolio"). This report represents the review by Hamilton Lane of TRS's Portfolio and is based upon information made available to Hamilton Lane by the general partners sponsoring each of the partnership investments in the Portfolio as of March 31, 2020, with highlights through June 30, 2020.

Portfolio Snapshot			
\$ millions	12/31/2019	3/31/2020	Change
Active Partnerships	182	183	1
Active GP Relationships	90	91	1
Capital Committed ⁽¹⁾	\$9,492.6	\$9,532.4	\$39.8
Liquidated Commitments	\$504.3	\$554.3	\$20.0
Commitments Sold	\$288.5	\$288.5	-
Unfunded Commitment	\$3,192.8	\$3,039.7	(\$153.1)
Capital Contributed	\$7,891.0	\$8,081.5	\$190.5
Capital Distributed	\$6,776.0	\$6,958.6	\$182.6
Market Value	\$4,655.5	\$4,223.5	(\$432.0)
Total Value Multiple	1.45x	1.38x	(0.07x)
Since Inception IRR	10.44%	9.49%	(95 bps)
Avg. Age of Active Commitments	6.5 years	6.6 years	0.1 years

⁽¹⁾ The "change" in capital committed and active commitments from the prior quarter reflects currency adjustments from existing foreign denominated funds and two new commitments made during the quarter.

Private Equity Allocation: TRS has a target allocation of 7.0% +/- 3.0% to Private Equity. As of March 31, 2020, Private Equity constituted 5.7% of TRS plan. (Plan value is \$73.653 billion as of March 31, 2020.)

Performance: As of March 31, 2020, the Portfolio consists of 183 partnerships and 91 underlying fund managers. The Portfolio has generated a since inception internal rate of return ("IRR") of 9.49% and a total value multiple of 1.38x.

Portfolio Exposures: The Corporate Finance/Buyout strategy represents 66% of the Portfolio's total exposure, Secondaries represents 10%, Special Situations/Turnaround represent 8%, Growth Equity accounts for 6%, Co-Investment represents 7%, Venture Capital represents 3%, and Energy represents the remaining 1%. The Portfolio has significant exposure to North America, with 70% of the underlying company market value based in the region.



Portfolio Overview

Commitments

The table below highlights the funds that have closed year-to-date as of March 31, 2020.

Year to Date Commitments as of March 31, 2020			
Closing Date	Partnership	Strategy	Commitment Amount (\$ in Millions)
1/11/2020	FTV VI, L.P.	Growth Equity	\$24.0
3/13/2020	Clearlake Capital Partners VI, L.P.	Corporate Finance/Buyout - Large	\$42.0
Total			\$66.0

During the first quarter, the Portfolio closed on two new investments, totaling \$66.0 million, which are detailed below:

FTV VI, L.P. (\$24.0 million) The fund, a 2019 EM Program commitment, will primarily target financial services and enterprise technology software businesses primarily in the United States, but also opportunistically invests internationally. The General Partner will target high growth businesses with strong customer retention that provide mission critical products or services to its consumers.

Clearlake Capital Partners VI, L.P. (\$42.0 million) The fund targets companies in various stages of growth and employs a flexible approach to investment structuring, driving its ability to capitalize on attractive market opportunities while maintaining its focus on downside protection. The General Partner has pursued a consistent investment strategy and aims to provide flexible capital to operationally and financially challenged businesses



Subsequent Closings

Subsequent Commitments After March 31, 2020			
Closing Date	Partnership	Strategy	Commitment Amount (\$ in Millions)
4/3/2020	Hg Genesis 9 L.P.	Corporate Finance/Buyout - Large	\$44.7
5/20/2020	One Rock Capital Partners III, L.P.	Corporate Finance/Buyout - Mid	\$39.0
5/29/2020	CVC Capital Partners VIII, L.P.	Corporate Finance/Buyout - Mega	\$154.5
6/4/2020	Stellex Capital Partners II, L.P.	Corporate Finance/Buyout - Mid	\$46.5
6/17/2020	ICG Strategic Equity Co-Investment Fund III LP	Co-Investment	\$20.6
6/30/2020	NYC-Northbound Emerging Managers Program, L.P.	Secondaries	\$192.0
Total			\$497.3

Hg Genesis 9, L.P. (\$44.7 million) The fund will primarily seek middle-market software and technology companies primarily in Europe. As the General Partner evolved to focus exclusively on software and technology services investing, it identified specific niches within the sectors that exhibit particularly attractive growth and market cycle-resilient characteristics, focusing on management interaction with companies in these clusters to preempt a sale event and position itself as the partner of choice.

One Rock Capital Partners III, L.P. (\$39.0 million) The fund targets companies within the chemicals and process, specialty manufacturing and healthcare products, food manufacturing and distribution, business and environmental services and auto retail sectors within the middle market.

CVC Capital Partners VIII, L.P. (\$154.5 million) The fund seeks to acquire large-cap companies primarily in European and North American markets. CVC covers all sectors, with three specialist investment teams focusing on Healthcare, Financial Services and TMT.

Stellex Capital Partners II, L.P. (\$46.5 million) The fund, a 2019 EM Program commitment, primarily focuses on control positions in middle-market businesses operating across the industrials, transportation and consumer sectors. The General Partner targets value-oriented opportunities, including undermanaged businesses and those experiencing periods of stress or distress.

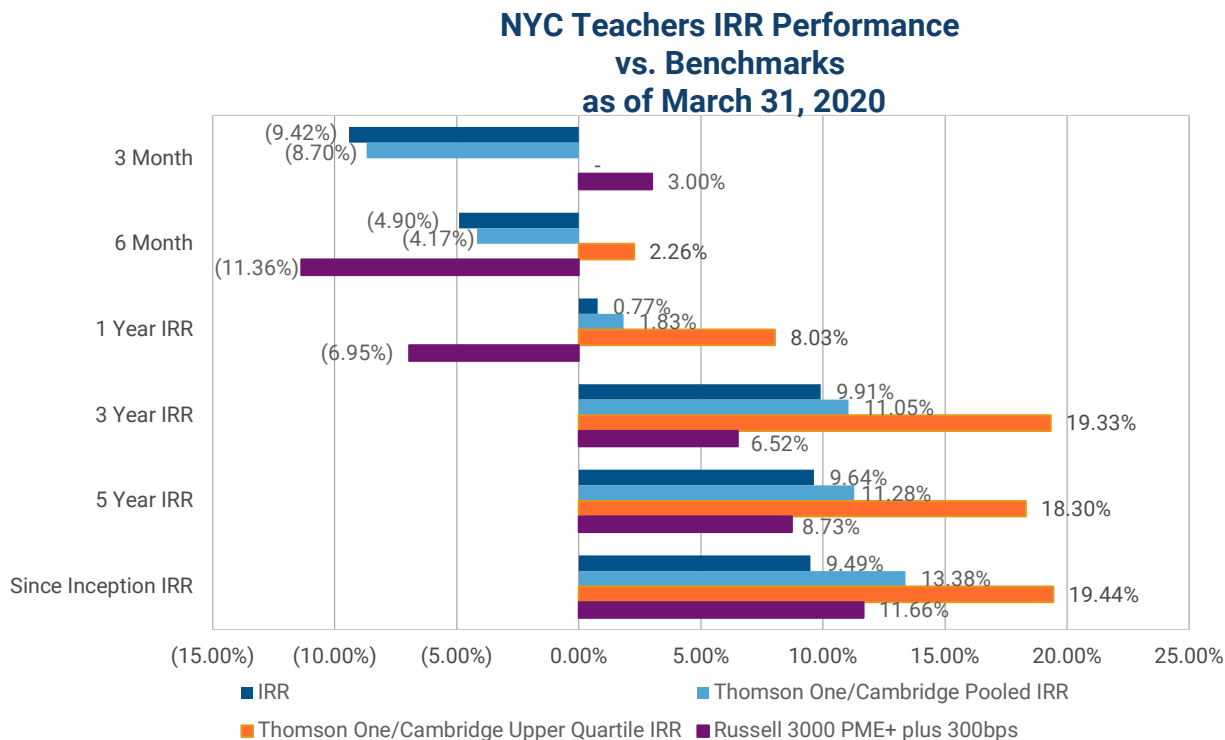
ICG Strategic Co-Investment Fund III, L.P. (\$20.6 million) The fund, a co-investment sleeve of ICG Strategic Equity Fund III, L.P., will primarily pursue sponsor-led secondary transactions, as well as other related transaction types, to gain access to quality assets in structurally challenged portfolios while providing whole-fund liquidity solutions to limited partners.

NYC-Northbound Emerging Managers Program, L.P. (\$192.0 million) The Vehicle, as established in conjunction with Neuberger Berman, will target first time private equity funds.



Portfolio Performance Summary

The chart below is a graphical depiction of the IRR performance of the Portfolio with respect to 3-Month, 6-Month, 1-Year, 3-Year, 5-Year, and Since Inception time periods. The Portfolio is benchmarked against the Cambridge Associates Pooled IRR, Cambridge Associates Upper Quartile IRR and the Russell 3000 Public Market Equivalent ("PME+") plus 300 basis points.



Note: Private Equity benchmark is provided by ThomsonOne/Cambridge and reflects U.S. Buyout Funds Pooled IRR and Upper Quartile IRR as of March 31, 2020, for funds with vintage years 1999 to 2019. PME+ is the Russell 3000 Total Return Index and incorporates the PME + methodology. This calculation includes a 3% premium.

- As private equity is a long term asset class, the most significant time horizon is the since inception time period. Performance on a since inception basis for the first quarter of 2020 decreased 97 basis points from the prior quarter, with the Portfolio generating an IRR of 9.49%.
 - Relative to the benchmarks, the since inception IRR is underperforming the Cambridge Associates Pooled IRR by 389 basis points, the Cambridge Associates Upper Quartile IRR by 995 basis points, and Russell 3000 PME+ plus 300 basis points by 217 basis points.
- Performance on a one-year basis for the first quarter of 2020 decreased by 1,518 basis points from the prior quarter, with the Portfolio generating an IRR of 0.77% as of March 31, 2020.
 - Relative to the benchmarks, the one-year IRR is outperforming the Russell 3000 PME+ plus 300 basis points by 772 basis points, but is underperforming the Cambridge Associates, Pooled IRR by 106 basis points, and the Cambridge Associates Upper Quartile IRR by 726 basis points.



Quarterly Value Analysis

The table below details quarterly performance of the Portfolio for the year ending March 31, 2020.

Portfolio Summary					
\$ millions	Quarter Ended				Year Ended
	6/30/2019	9/30/2019	12/31/2019	3/31/2020	3/31/2020
Beginning Market Value	\$4,264.7	\$4,371.5	\$4,484.1	\$4,655.5	\$4,264.7
Paid-In Capital	145.7	199.9	289.8	190.5	825.9
Distributions	(223.4)	(154.0)	(339.4)	(182.6)	(899.4)
Net Value Change	184.5	66.7	221.0	(439.9)	32.3
Ending Market Value	\$4,371.5	\$4,484.1	\$4,655.5	\$4,223.5	\$4,223.5
Unfunded Commitments	\$3,043.5	\$3,248.5	\$3,192.8	\$3,039.7	\$3,039.7
Total Exposure	\$7,415.0	\$7,732.6	\$7,848.3	\$7,263.2	\$7,263.2
Point-to-Point IRR	4.38%	1.52%	4.93%	(9.42%)	0.77%
Since Inception IRR	10.33%	10.25%	10.44%	9.49%	9.49%

- Over the past twelve months, the Portfolio has experienced a total of \$32.3 million in net value appreciation.
- Distributions of \$899.4 million outpaced contributions of \$825.9 million during the twelve months ending March 31, 2020.
- The Portfolio experienced a point-to-point IRR of 0.77% over the year.



Performance by Strategy

The table below details IRR performance of the Portfolio with respect to Investment Strategy. The Portfolio is benchmarked against the Cambridge Associates Median Quartile IRR, and the Cambridge Associates Upper Quartile IRR.

Performance by Investment Strategy				
Investment Strategy	Capital Committed ⁽¹⁾	IRR	Cambridge Associates Median IRR ⁽²⁾	Cambridge Associates Upper IRR ⁽²⁾
Corporate Finance/Buyout	\$5,994,008,135	10.35%	11.60%	18.68%
Corporate Finance/Buyout - Mega	2,627,827,195	10.27%	11.05%	15.20%
Corporate Finance/Buyout - Large	1,655,553,397	15.02%	10.60%	17.31%
Corporate Finance/Buyout - Mid	947,203,806	8.98%	10.80%	18.06%
Corporate Finance/Buyout - Small	763,423,737	7.69%	12.30%	19.78%
Co-Invest ⁽²⁾	585,275,678	8.47%	7.30%	13.60%
Energy	217,500,000	(3.24%)	3.32%	12.54%
Growth Equity	538,371,863	10.15%	14.91%	22.52%
Secondaries	1,028,236,763	12.21%	10.87%	16.72%
Special Situations	734,000,000	17.36%	10.25%	19.59%
Other ⁽²⁾	435,000,000	4.54%	7.30%	13.60%
Venture Capital	385,000,000	4.07%	4.00%	10.96%
Mezzanine ⁽²⁾	50,000,000	12.84%	7.30%	13.60%

⁽¹⁾ Commitments in the above table do not include liquidated/sold investments.

⁽²⁾ Co-Invest, Other and Mezzanine benchmarks reflect the Cambridge Associates Global All Private Equity benchmark.



Vintage Year Performance

The table below details IRR performance of the Portfolio with respect to Vintage Year. The Portfolio is benchmarked against the Cambridge Associates Median Quartile IRR, Cambridge Associates Upper Quartile IRR, and the Russell 3000 Public Market Equivalent (“PME+”).

Performance by Vintage Year						
Vintage Year	Capital Committed ⁽¹⁾	IRR	Cambridge Associates Median IRR ⁽²⁾	Cambridge Associates Upper IRR ⁽²⁾	PME Return ⁽³⁾	PME Spread ⁽⁴⁾
1999	\$65,000,000	7.49%	9.29%	14.15%	6.33%	1.16%
2000	35,000,000	5.66%	14.31%	22.32%	5.49%	0.17%
2001	50,000,000	18.80%	20.39%	28.47%	7.62%	11.19%
2002	15,000,000	15.43%	17.57%	26.45%	6.83%	8.59%
2003	85,000,000	19.66%	13.59%	19.25%	6.51%	13.16%
2004	174,000,000	2.76%	10.95%	14.26%	7.64%	(4.87%)
2005	214,225,800	5.21%	8.16%	11.99%	6.82%	(1.62%)
2006	527,920,891	7.81%	8.80%	15.81%	8.67%	(0.86%)
2007	496,313,304	6.10%	12.23%	15.92%	11.21%	(5.11%)
2008	703,856,236	11.20%	13.51%	20.26%	12.67%	(1.46%)
2009	42,500,000	9.80%	22.27%	26.24%	14.16%	(4.37%)
2010	45,000,000	10.51%	17.28%	19.76%	11.16%	(0.65%)
2011	577,479,851	14.89%	13.49%	20.56%	11.84%	3.05%
2012	582,750,000	15.17%	16.48%	23.29%	9.50%	5.67%
2013	659,600,000	9.33%	13.19%	17.88%	6.86%	2.47%
2014	799,230,195	14.75%	14.50%	20.18%	6.45%	8.31%
2015	642,577,739	12.90%	11.86%	16.83%	3.56%	9.34%
2016	557,000,000	12.22%	8.11%	14.48%	0.70%	11.52%
2017	776,038,076	4.73%	10.23%	21.61%	(6.12%)	10.85%
2018	997,788,584	N/M	N/M	N/M	N/M	N/M
2019	1,232,611,763	N/M	N/M	N/M	N/M	N/M
2020	253,500,000	N/M	N/M	N/M	N/M	N/M

⁽¹⁾ Commitments in the above table do not include liquidated/sold investments.

⁽²⁾ Cambridge Associates Benchmark - US Buyouts as of 3/31/2020.

⁽³⁾ PME Return is the Russell 3000 Total Return Index and incorporates the PME+ methodology.

⁽⁴⁾ PME Spread is the percentage difference between the IRR and PME Benchmark for each respective vintage year.



Performance by Geographic Focus

The table below details IRR performance of the Portfolio with respect to Geographic Focus.

Performance Summary by Region ⁽¹⁾⁽²⁾						
Region	Capital Committed	Paid-In Capital	Capital Distributed	Reported Market Value	IRR	Total Value Multiple
North America	\$6,196,438,067	\$5,681,821,031	\$5,222,425,131	\$2,872,104,004	9.96%	1.42x
Western Europe	\$1,215,931,271	922,484,161	479,909,777	668,331,799	7.26%	1.24x
Global/Rest of World	2,120,023,102	1,477,183,469	1,256,296,154	683,080,001	8.42%	1.31x
Total	\$9,532,392,440	\$8,081,488,661	\$6,958,631,062	\$4,223,515,804	9.49%	1.38x

Note: Commitments in the above table do not include liquidated/sold investments.

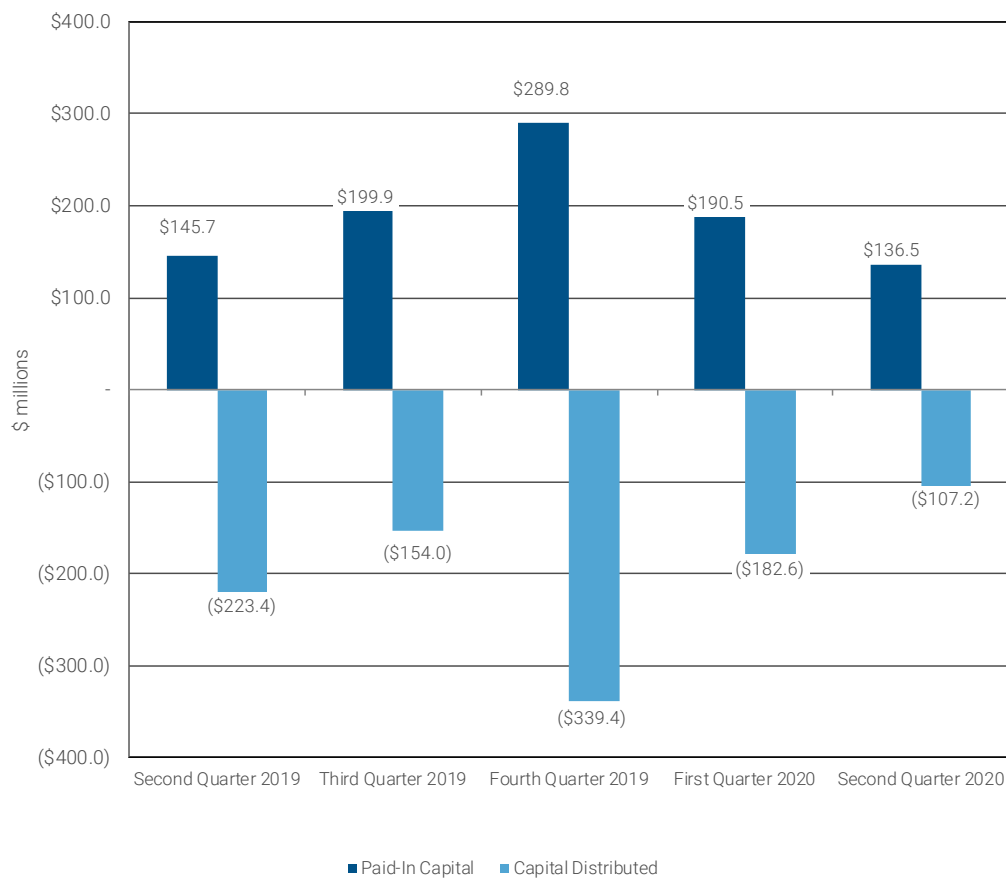
⁽¹⁾Prior to a partnership being 75% drawn, region focus is based on the GP-stated geographic strategy. Subsequent to a partnership being 75% drawn, fund geographic focus is based on actual portfolio company exposure by total invested. Partnerships with less than 75% of total invested capital allocated to one geographic region are classified as Global.

⁽²⁾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.



Cash Flow Drivers

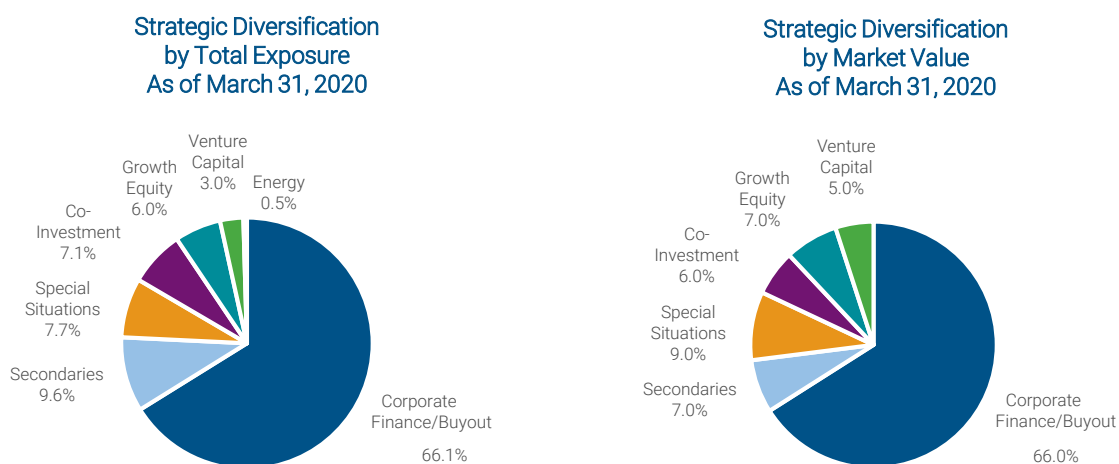
The chart below highlights the cash flows of the Portfolio over the past five quarters ended June 30, 2020.





Portfolio Exposures

The pie charts below represent the strategic and geographic diversification of the Portfolio as of March 31, 2020. Strategy is measured by total exposure, which is the sum of the market value and the unfunded commitments and provides a snapshot of the Portfolio's future diversification. Geography is measured by the Portfolio's exposed market value of the underlying portfolio companies.



As of March 31, 2020

	Sum of Current Exposed Market Value	% of Total
North America	\$3,291.0	70%
U.S. (non-NY State)	\$2,995.2	63%
U.S. (NY State)	\$295.8	7%
New York City	\$132.5	3%
Non-New York City	\$163.4	4%
Western Europe	\$936.3	20%
Rest of World	\$397.1	8%
Asia	\$99.8	2%
Total	\$4,724.3	100%

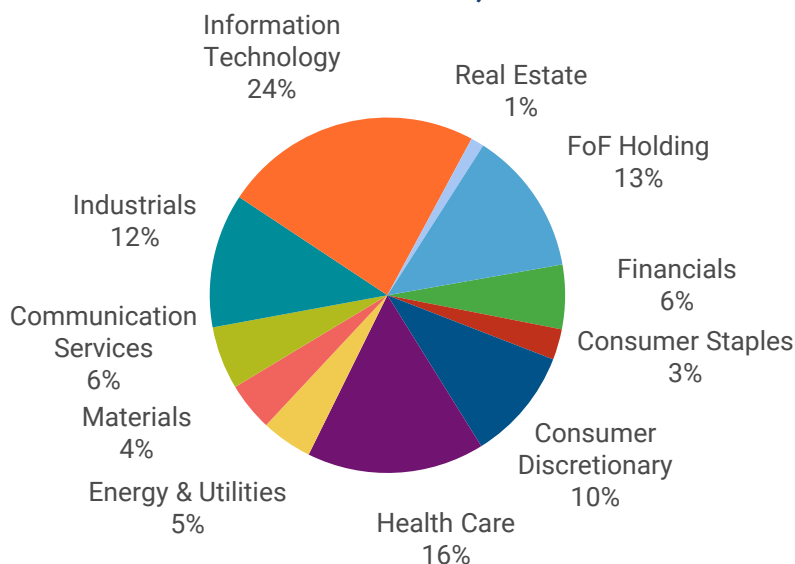
- The Portfolio is focused in the Corporate Finance/Buyout strategy, with 66% of the total exposure attributable to this strategy.
- With respect to geography, the Portfolio is concentrated in North America, with 70% of the Portfolio's underlying market value attributable to this region.
 - The remaining 30% of the Portfolio's exposure is diversified between Western Europe, Asia and 'Rest-of-World'.



- Roughly 7% of the Portfolio's current exposed market value is based in New York.
 - About 3%, or roughly \$132.5 million, of the Portfolio's current exposed market value is based in New York City.

The pie chart below represents the industry diversification of the Portfolio as of March 31, 2020. Industry diversification is measured by the Portfolio's exposed market value of the underlying portfolio companies.

Underlying Investment Diversification by Industry As of March 31, 2020



Teachers' Retirement System of the City of New York

First Quarter 2020 Report



Section 2:

Portfolio Assessment

Teachers' Retirement System of the City of New York
Private Equity Portfolio
As of March 31, 2020 (in USD)

Vintage Year	Investment	First Drawdown	Committed Capital	Paid-In Capital	Distributed Capital	Market Value	Multiple	IRR ²	PME Benchmark ³	PME Spread ⁴
Active Investments										
1999	Cypress Merchant Banking Partners II, LP	7/8/1999	\$50,000,000	\$53,983,573	\$50,623,035	\$24,183	0.94x	(1.18)%	5.55%	(6.72)%
1999	Lincolshire Equity Fund II, L.P.	2/26/2001	15,000,000	14,446,100	28,316,507	253,866	1.98x	24.58%	6.95%	17.63%
2000	SCP Private Equity Partners II, L.P.	1/19/2001	20,000,000	22,196,012	8,429,680	1,911,179	0.47x	(8.49)%	5.52%	(14.01)%
2000	Solera Partners, L.P.	7/8/2002	15,000,000	20,054,250	31,226,365	116,841	1.56x	7.42%	6.11%	1.31%
2001	Apollo Investment Fund V, L.P.	8/23/2001	30,000,000	46,758,049	92,244,552	258,425	1.98x	38.77%	8.32%	30.46%
2001	RRE Ventures III, L.P.	6/13/2002	20,000,000	26,269,971	34,025,652	1,070,322	1.34x	5.37%	6.50%	(10.12)%
2002	Thomas McNemey & Partners, L.P.	11/26/2002	15,000,000	15,000,000	7,543,579	1,717,057	0.62x	(7.30)%	10.12%	(17.43)%
2002	Ares Corporate Opportunities Fund, L.P.	5/4/2004	15,000,000	18,004,666	26,835,382	38,750	1.49x	13.07%	7.37%	5.70%
2002	Blackstone Capital Partners IV, L.P.	11/10/2002	30,000,000	30,690,321	77,506,027	237,524	2.53x	37.80%	8.22%	29.59%
2003	FS Equity Partners V, L.P.	5/30/2003	25,000,000	20,204,332	40,645,843	1,448,989	2.08x	15.28%	5.80%	10.48%
2003	Leeds Weld Equity Partners IV, L.P.	12/13/2004	15,000,000	15,441,454	20,171,550	28,771	1.31x	4.23%	5.00%	(1.27)%
2004	FdG Capital Partners II, L.P.	8/30/2004	35,000,000	37,720,800	43,606,491	2,043,571	1.21x	3.66%	6.64%	(2.99)%
2004	Lincolshire Equity Fund III, L.P.	12/23/2004	25,000,000	25,003,156	35,566,467	9,449,400	1.80x	28.06%	10.15%	17.90%
2004	Markstone Capital Partners, L.P.	7/21/2004	35,000,000	40,766,689	17,074,753	163,685	0.42x	(41.75)%	10.76%	(52.51)%
2004	New York/Fairview Emerging Managers (Tranche A), L.P.	10/21/2004	24,000,000	24,646,553	24,888,620	2,570,630	1.11x	1.82%	8.44%	(6.62)%
2004	Yucaipa American Alliance Fund I, L.P.	10/1/2004	55,000,000	80,825,203	95,182,290	3,809,806	1.22x	4.62%	10.48%	(5.86)%
2005	Blackstone Mezzanine Partners II, L.P.	5/26/2006	20,000,000	19,342,116	25,639,056	212,975	1.34x	7.81%	3.65%	4.17%
2005	JP Morgan Fleming (Tranche A), L.P.	12/21/2005	31,000,000	31,201,939	34,169,442	5,987,088	1.29x	4.81%	10.42%	(5.61)%
2005	New Mountain Partners II, L.P.	1/12/2005	23,225,800	21,482,843	40,969,939	361,947	1.92x	13.63%	4.45%	9.18%
2005	NB NYC Growth Fund, LLC	8/16/2005	30,000,000	26,117,536	32,957,942	1,266	1.26x	3.72%	4.69%	(0.97)%
2005	Palladium Equity Partners III, L.P.	8/10/2005	35,000,000	37,665,701	69,409,326	626,145	1.86x	14.63%	7.01%	3.58%
2005	Pelios Group Partners III, L.P.	10/17/2007	25,000,000	26,575,585	12,830,511	23,520,233	1.37x	4.23%	4.23%	(2.78)%
2005	Snow Phipps Group, L.P.	8/2/2007	15,000,000	17,775,294	15,590,643	4,794,510	1.15x	3.15%	10.24%	(7.09)%
2005	USPF II Institutional Fund, L.P.	11/23/2005	35,000,000	46,164,567	53,817,886	4,889,735	1.27x	4.03%	7.55%	(3.53)%
2006	Aisling Capital II, L.P.	1/12/2006	4,500,000	5,099,563	5,112,601	193,207	1.04x	0.73%	7.90%	(7.17)%
2006	Ampsand 2006, L.P.	7/6/2007	15,000,000	15,000,000	33,280,995	11,930,863	3.01x	16.81%	8.12%	8.70%
2006	Apollo Investment Fund VI, L.P.	5/10/2006	35,000,000	45,048,207	67,409,336	666,393	1.51x	8.67%	7.56%	1.11%
2006	Ares Corporate Opportunities Fund II, L.P.	5/23/2006	30,000,000	32,905,774	54,862,020	51,851	1.67x	13.05%	3.79%	9.26%
2006	Arsenal Capital Partners II, L.P.	12/19/2006	13,500,000	16,525,966	31,930,803	116,331	1.94x	12.08%	11.98%	0.10%
2006	Avista Capital Partners, L.P.	8/11/2006	30,000,000	39,559,256	48,298,581	462,299	1.23x	4.44%	6.25%	(1.81)%
2006	BDCM Opportunity Fund II, L.P.	12/28/2006	25,000,000	37,213,402	77,551,921	22,260,627	2.68x	18.32%	10.43%	7.88%
2006	Blackstone Capital Partners V, L.P.	4/13/2006	75,600,000	76,527,551	125,510,871	1,67x	8.34%	8.30%	0.00%	0.00%
2006	Catterton Partners VI, L.P.	12/14/2006	30,000,000	34,300,531	53,790,882	9,239,155	1.84x	11.30%	8.44%	2.86%
2006	Cinven Fourth Fund	1/22/2007	43,264,875	45,622,616	65,913,468	31,342	1.45x	7.37%	7.64%	(0.28)%
2006	Fainview Ventures Fund III, L.P.	7/13/2007	20,000,000	22,077,530	32,004,180	13,391,639	2.14x	13.87%	11.26%	2.61%
2006	First Reserve Fund XI, L.P.	12/22/2006	30,000,000	34,241,400	22,590,006	(8,959)	0.66x	(10.67)%	6.12%	(16.78)%
2006	GF Capital Private Equity Fund, L.P.	3/20/2008	15,000,000	15,900,603	20,491,630	6,596,059	1.70x	11.55%	11.54%	0.01%
2006	InterMedia Partners VII, L.P.	6/8/2006	25,000,000	29,229,224	29,591,746	-	1.01x	0.19%	9.70%	(9.51)%
2006	Landmark Equity Partners XIII, L.P.	5/15/2006	25,000,000	23,702,196	30,218,971	1,277,300	1.33x	4.98%	6.83%	(1.85)%
2006	MidOcean Partners III, L.P.	6/19/2007	40,000,000	46,443,236	91,132,892	4,926,342	2.07x	12.93%	9.59%	3.34%
2006	RRE Ventures IV, L.P.	10/25/2006	25,000,000	31,713,745	22,967,573	19,963,880	1.54x	4.23%	9.63%	(5.40)%
2006	Terra Firma Capital Partners III, L.P.	2/26/2007	31,056,016	31,592,557	12,312,416	1,998,403	0.45x	(9.50)%	9.78%	(5.28)%
2006	Thomas, McNemey & Partners II, L.P.	11/30/2006	15,000,000	14,867,607	32,724,518	1,388,446	2.29x	16.66%	11.37%	19.29%
2007	Carlyle Partners V, L.P.	9/28/2007	50,000,000	50,406,980	82,822,882	6,654,692	1.78x	13.19%	10.68%	2.52%
2007	Co-Investment Partners Europe, L.P.	11/25/2008	26,420,018	29,219,332	35,608,493	715,771	1.24x	4.33%	15.16%	(10.83)%
2007	Consultation Ventures III, L.P.	11/20/2008	15,000,000	17,295,998	17,295,998	8,712,259	4,457,285	0.76x	(4.25)%	14.08%
2007	FT Ventures III, L.P.	3/1/2007	14,081,947	14,882,466	24,629,681	3,439,425	1.89x	11.04%	9.76%	1.29%
2007	GSD Capital Opportunities Fund, L.P.	8/15/2008	30,000,000	48,291,339	67,124,625	306,617	1.40x	10.79%	10.09%	7.20%
2007	Hayward Capital Fund II, L.P.	11/2/2007	15,000,000	13,003,177	15,892,199	3,416,538	1.48x	6.93%	9.47%	(2.54)%
2007	Montréal Equity Partners IV, L.P.	3/27/2007	15,000,000	14,930,359	8,224,849	11,681,324	1.33x	4.15%	9.06%	(4.91)%
2007	Nautic Partners VI, L.P.	6/30/2008	20,000,000	21,709,380	47,967,971	4,061,382	2.40x	18.62%	11.64%	6.98%
2007	New Mountain Partners III, L.P.	9/25/2007	35,000,000	35,949,400	47,758,635	24,249,569	2.00x	12.81%	11.44%	1.37%
2007	PCG Clean Energy & Technology Fund East, L.P.	4/25/2008	60,000,000	51,863,265	13,972,770	3,566,380	0.34x	(15.24)%	12.93%	(28.17)%
2007	Pegasus Partners IV, L.P.	10/9/2007	20,000,000	26,382,521	20,483,112	4,101,545	0.93x	(1.44)%	10.83%	(12.27)%
2007	Pine Brook Capital Partners, L.P.	4/7/2008	22,500,000	24,872,461	33,545,188	275,937	1.36x	8.08%	12.05%	(3.97)%
2007	Quaker BioVentures II, L.P.	4/18/2008	15,000,000	14,902,775	13,407,409	1,982,711	1.03x	0.77%	12.33%	(11.56)%
2007	RJF Equity Partners Fund I, L.P.	4/14/2009	15,000,000	15,370,089	18,882,374	5,757,137	1.60x	10.08%	12.84%	(2.76)%
2007	SLC Vitallie Partners II, L.P.	11/10/2008	15,000,000	15,074,774	1,184	5,904,258	0.39x	(10.05)%	4.92%	(14.97)%
2007	StarWest Partners II, L.P.	12/8/2008	20,000,000	20,106,956	8,829,023	9,925,294	0.93x	(8.36)%	13.92%	(20.15)%
2007	Trilantic Capital Partners IV, L.P.	10/22/2007	53,211,239	55,886,260	82,636,488	4,571,742	1.56x	13.59%	11.02%	2.57%
2007	USPF III Institutional Fund, L.P.	7/10/2007	30,000,000	35,493,985	36,616,209	6,477,446	1.21x	3.48%	9.11%	(5.63)%
2007	Vista Equity Partners Fund III, L.P.	11/30/2007	25,000,000	26,880,279	63,887,396	1,990,170	2.45x	26.88%	9.68%	17.20%
2008	Aisling Capital III, L.P.	11/20/2008	10,500,000	11,843,931	27,387,186	529,933	2.36x	26.36%	14.17%	12.19%
2008	Apollo Investment Fund VII, L.P.	4/16/2008	50,000,000	61,200,709	97,467,460	4,586,814	1.67x	22.75%	13.32%	9.43%
2008	Ares Corporate Opportunities Fund III, L.P.	7/30/2008	60,000,000	71,227,683	145,319,902	8,774,583	2.16x	20.79%	11.80%	8.99%
2008	Avista Capital Partners II, L.P.	12/31/2008	50,000,000	65,983,085	103,399,707	3,804,157	1.62x	14.43%	14.59%	(0.16)%
2008	Blue Wolf Capital Fund II, L.P.	11/14/2008	20,000,000	21,768,204	25,173,874	8,092,484	1.53x	9.23%	14.53%	(5.29)%
2008	Bridgepoint Europe IV, L.P.	9/30/2008	26,482,499	24,683,679	33,847,774	3,844,637	1.53x	9.58%	14.40%	(4.82)%
2008	First Reserve Fund XII, L.P.	11/14/2008	30,000,000	33,919,785	17,332,917	4,018,822	0.63x	(11.68)%	16.55%	(28.24)%
2008	GCM Grosvenor TRSNCV Emerging Manager Fund, L.P.	8/22/2008	59,373,737	73,791,219	67,216,339	38,544,568	1.43x	9.88%	11.48%	(1.60)%
2008	GI Partners III, L.P.	7/29/2008	20,000,000	32,406,727	50,341,557	1,578	1.57x	12.98%	15.29%	(2.31)%
2008	Landmark Equity Partners XIV, L.P.	9/19/2008	50,000,000	48,588,834	85,373,716	8,020,863	1.30x	8.89%	13.22%	(3.43)%
2008	Leeds Weld Equity Partners V, L.P.	7/28/2008	40,000,000	40,780,195	69,987,160	26,898,549	2.38x	19.06%	11.86%	7.19%
2008	Levine Leichtman Capital Partners IV, L.P.	9/22/2008	25,000,000	26,635,586	42,253,395	2,110,417	1.67x	18.00%	14.01%	3.99%
2008	New York/Fairview Emerging Managers (Tranche B), L.P.	5/28/2008	35,000,000	34,997,529	42,925,952	42,149,478	2.43x	18.09%	10.40%	7.70%
2008	NGN BioMed Opportunity II, L.P.	10/31/2008	15,000,000	14,363,866	10,009,657	7,692,436	1.23x	3.03%	14.16%	(11.13)%
2008	Onex Partners III, L.P.	3/31/2009	40,000,000	43,741,968	58,210,973	8,622,827	1.53x	10.65%	14.48%	(3.83)%
2008	Paladin III (NY City), L.P.	1/8/2008	20,000,000	26,250,696	20,136,103	33,325,515	2.04x	12.90%	9.86%	3.04%
2008	Riverstone/Carlyle Global Energy & Power Fund IV	9/29/2008	32,500,000	35,237,315	53,821,470	2,112,174	1.08x	2.10%	13.66%	(11.56)%
2008	Yucaipa American Alliance Fund II, L.P.	3/28/2008	75,000,000	103,942,343	100,035,531	65,783,736	1.60x	8.46%	11.03%	(2.57)%
2008	Yucaipa Corporate Initiatives Fund II, L.P.	6/23/2008	35,000,000	32,157,997	19,205,889	6,662,359	0.80x	(3.25)%	11.73%	(14.98)%
2009	Lincolshire Equity Fund IV, L.P.	8/7/2009	12,500,000	12,766,164	14,803,288	4,960,511	1.55x	9.97%	12.36%	(2.99)%
2009	Welsh, Carson, Anderson & Stowe XI, L.P.	2/10/2009	30,000,000	30,000,000	39,096,063	8,680,012	1.59x	11.44%	14.00%	(2.56)%
2010	JP Morgan Fleming (Tranche B), L.P.	5/31/2010	10,000,000	10,459,178	8,533,956	8,930,754	1.59x	9.81%	11.35%	(1.35)%
2010	Trident V, L.P.	12/20/2010	35,000,000	41,083,855	46,387,907	17,704,400	1.61x	10.70%	11.16%	(0.46)%
2011	American Securities Partners VI, L.P.	1/10/2012	100,000,000	107,262,584	161,150,007	44,067,125	1.91x	20.66%	11.51%	9.16%
2011	Ampsand 2011, L.P.	3/11/2011	17,500,000	17,500,000	32,282,507	21,292,478	3.06x	21.72%	10.43%	11.29%
2011	AXA Secondary Fund V, L.P.	8/11/2011	160,000,000	85,770,811	131,512,751	718,927	1.54x	13.56%	15.29%</	

Teachers' Retirement System of the City of New York
Private Equity Portfolio
As of March 31, 2020 (in USD)

Vintage Year	Investment	First Drawdown	Committed Capital	Paid-In Capital	Distributed Capital	Market Value	Multiple	IRR ²	PME Benchmark ³	PME Spread ⁴
2016	Platinum Equity Capital Partners IV, L.P.	3/21/2017	156,000,000	139,614,716	43,094,625	107,262,082	1.08x	5.40%	(1.08%)	6.48%
2017	Ares Corporate Opportunities Fund V, L.P.	6/22/2017	134,000,000	115,432,561	14,365,655	101,550,171	1.00x	0.31%	(4.66%)	4.97%
2017	Green Equity Investors VII, L.P.	5/12/2017	134,000,000	103,991,343	1,200,328	117,459,737	1.14x	8.31%	(3.78%)	12.09%
2017	BC European Capital X, L.P.	12/14/2017	125,492,897	107,395,631	2,098,531	105,953,544	1.01x	0.52%	(8.79%)	9.31%
2017	BC European Capital X Metro Co-Investment L.P.	3/24/2017	50,878,512	47,009,927	320,286	51,971,569	1.11x	7.16%	13.33%	(6.17%)
2017	KKR Americas Fund XII, L.P.	2/27/2018	223,000,000	106,821,884	1,470,200	112,278,358	1.06x	4.45%	(4.71%)	9.15%
2017	Palladium Equity Partners V, L.P.	2/11/2019	26,666,667	8,907,683	89,065	7,141,380	0.81x	(27.88%)	(11.05%)	(16.83%)
2018	CVC Capital Partners VII, L.P.	6/30/2018	151,599,179	76,421,203	1,072,202	74,677,478	0.99x	N/A	N/A	N/A
2018	Apollo Investment Fund IX, L.P.	3/15/2019	256,000,000	46,517,629	477,463	41,913,758	0.91x	N/A	N/A	N/A
2018	Bridgepoint Europe VI, L.P.	4/1/2019	94,263,587	18,537,442	-	16,388,215	0.88x	N/A	N/A	N/A
2018	EQT VIII SCSP	8/10/2018	84,847,821	38,673,891	1,075,460	40,843,718	1.08x	N/A	N/A	N/A
2018	Bridgepoint Europe VI Co-Invest	5/7/2019	23,626,403	5,559,174	-	4,676,137	0.84x	N/A	N/A	N/A
2018	Siris Partners IV, L.P.	3/15/2019	71,000,000	32,654,905	-	26,813,478	0.82x	N/A	N/A	N/A
2018	Platinum Equity Capital Partners IV, L.P. (Co-Invest)	9/7/2018	22,000,000	15,429,959	3,069,976	10,893,222	0.90x	N/A	N/A	N/A
2018	Platinum Equity Small Cap Fund, L.P.	6/27/2018	32,500,000	7,383,426	81,315	2,581,869	0.36x	N/A	N/A	N/A
2018	EQT VIII SCSP (Co-Invest)	11/2/2018	31,451,593	17,395,185	-	18,531,160	1.07x	N/A	N/A	N/A
2018	Vista Equity Partners Fund VII, L.P.	2/13/2019	142,000,000	35,841,664	109,340	33,329,071	0.93x	N/A	N/A	N/A
2019	Crestview Partners IV (FF), L.P.	N/A	19,000,000	-	-	30,785	N/A	N/A	N/A	N/A
2019	Crestview Partners IV, L.P.	N/A	57,000,000	-	-	14,550	N/A	N/A	N/A	N/A
2019	KKR European Fund V, L.P. - USD	1/15/2020	89,000,000	10,131,866	-	6,996,301	0.69x	N/A	N/A	N/A
2019	Lexington Capital Partners IX, L.P.	12/20/2019	85,125,000	6,028,550	1,074,094	8,810,173	1.64x	N/A	N/A	N/A
2019	ASF VIII, L.P.	3/15/2019	158,000,000	37,496,458	463	39,919,450	1.06x	N/A	N/A	N/A
2019	ASF VIII B NYC Co-Invest, L.P.	3/15/2019	79,000,000	3,363,615	-	5,279,059	1.57x	N/A	N/A	N/A
2019	Warburg Pincus Global Growth, L.P.	3/26/2019	114,000,000	21,499,073	85,500	19,788,150	0.92x	N/A	N/A	N/A
2019	LCP IX Co-Invest Partners B, L.P.	N/A	28,375,000	-	-	(26,828)	N/A	N/A	N/A	N/A
2019	Lindsay Goldberg V, L.P.	N/A	79,000,000	-	-	-	N/A	N/A	N/A	N/A
2019	WCAS XIII, L.P.	3/14/2019	71,000,000	4,440,363	-	2,223,782	0.50x	N/A	N/A	N/A
2019	Apax X, L.P.	N/A	95,000,000	-	-	(1,632,817)	N/A	N/A	N/A	N/A
2019	Platinum Equity Capital Partners V, L.P.	12/27/2019	142,000,000	16,200,636	-	12,180,346	0.75x	N/A	N/A	N/A
2020	PECP V Co-Investment, L.P.	N/A	35,500,000	-	-	-	N/A	N/A	N/A	N/A
2019	Trilantic Capital Partners VI (North America), L.P.	8/8/2019	46,000,000	9,229,441	10,102	6,742,731	0.73x	N/A	N/A	N/A
2019	Blackstone Capital Partners VIII, L.P.	N/A	99,000,000	-	-	(147,422)	N/A	N/A	N/A	N/A
2019	NYCTRS - 2019 Emerging Manager Program***	9/25/2019	240,000,000	12,180,539	673,789	12,337,152	1.07x	N/A	N/A	N/A
2019	ICG Strategic Equity Fund III LP	3/4/2020	41,111,763	367,758	-	1,041,896	2.83x	N/A	N/A	N/A
2020	Green Equity Investors VIII Coinvest N, L.P.	N/A	33,000,000	-	-	-	N/A	N/A	N/A	N/A
2020	Green Equity Investors VIII, L.P.	N/A	99,000,000	-	-	-	N/A	N/A	N/A	N/A
2020	Clearlake Capital Partners VI, L.P.	N/A	42,000,000	-	-	-	N/A	N/A	N/A	N/A
2020	FTV VII, L.P.	3/18/2020	24,000,000	1,920,000	-	1,825,239	0.95x	N/A	N/A	N/A
Total Active Investments			\$9,722,392,440	\$7,277,785,587	\$5,963,259,863	\$4,223,515,804	1.40x			
Total Exited Investments			\$804,679,929	\$803,703,075	\$995,371,199	-	1.24x			
Total Portfolio¹			\$10,527,072,368	\$8,081,488,661	\$6,958,631,062	\$4,223,515,804	1.38x	9.49%	8.66%	0.83%
Vintage Year	Investment	First Drawdown	Committed Capital	Paid-In Capital	Distributed Capital	Market Value	Multiple	IRR ²	PME Benchmark ³	PME Spread ⁴
Commitments Closed Subsequent to March 31, 2020										
2020	CVC Capital Partners VIII, L.P.	N/A	154,543,297	-	-	-	N/A	N/A	N/A	N/A
2020	Hg Genesis 9 L.P.	N/A	44,676,910	-	-	-	N/A	N/A	N/A	N/A
2020	ICG Strategic Equity Co-Investment Fund III LP	N/A	20,555,881	-	-	-	N/A	N/A	N/A	N/A
2020	NYC-Northbound Emerging Managers Program, L.P.	N/A	192,000,000	-	-	-	N/A	N/A	N/A	N/A
2020	One Rock Capital Partners III, L.P.	N/A	39,000,000	-	-	-	N/A	N/A	N/A	N/A
2020	Stellax Capital Partners II, L.P.	N/A	46,500,000	-	-	-	N/A	N/A	N/A	N/A
Total Commitments Closed Subsequent to as of Date			\$497,276,088	-	-	-	N/A	N/A	N/A	N/A

¹Please note that the NYCTRS - 2012 Emerging Manager Program includes the total commitment amount of \$165.05 million. The Program's original commitment amount of \$175 million was subsequently revised to \$165.05 million, all of which has been committed as of March 31, 2020. The remaining \$9.95 million was reallocated to the NYCTRS - 2015 Emerging Manager Program.

²Please note that the NYCTRS - 2015 Emerging Manager Program includes the total commitment amount of \$198.5 million. The Program's original commitment amount of \$209.95 million, which included the original \$200 million commitment and the \$9.95 million reallocation from the NYCTRS - 2012 Emerging Manager Program, was subsequently revised to \$198.5 million. As of March 31, 2020, all \$198.5 million has been committed, and the remaining \$11.45 million was reallocated to the NYCTRS - 2019 Emerging Manager Program.

³Please note that the NYCTRS - 2019 Emerging Manager Program commitment amount totals \$251.45 million, which includes the Program's original \$240 million commitment and the \$11.45 million reallocation from the NYCTRS - 2015 Emerging Manager Program. As of March 31, 2020, \$50 million has been committed.

⁴Please note that the Total Portfolio is inclusive of liquidated investments in the TRS Portfolio and include sales proceeds from the 2012 Secondary Sale Partnerships.

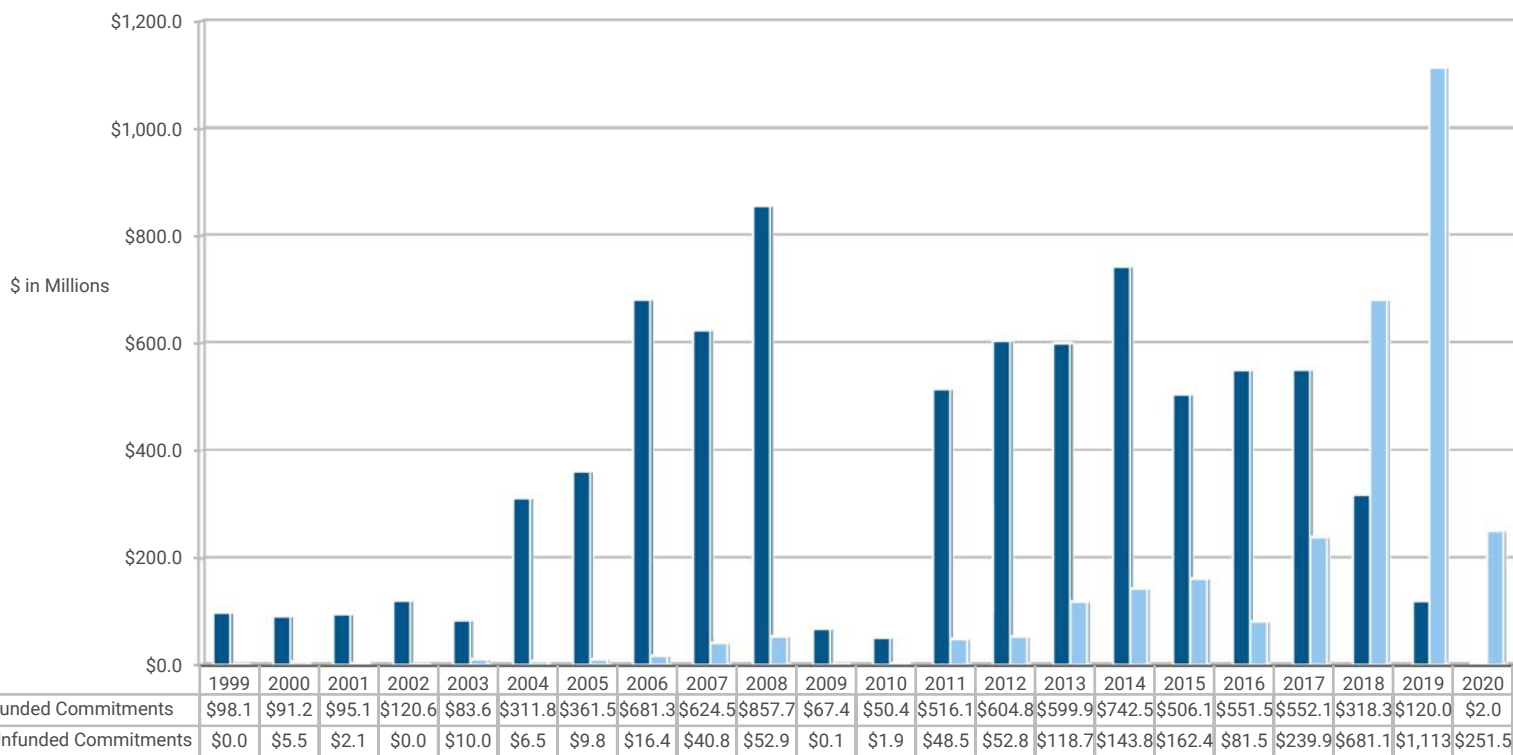
⁵Performance for funds with less than 8 quarters of activity is not yet meaningful.

⁶The total PME is the Russell 3000 Total Return Index and incorporates the PME+ methodology for all partnerships where distributions have occurred, and incorporates the Long Nickel methodologies for those partnerships that have not yet had any distributions to date. The fund PME is the Russell 3000 Total Return Index and incorporates the PME+ methodology for all partnerships where distributions have occurred.

⁷PME Spread is the percentage difference between the IRR and PME Benchmark for each respective partnership.

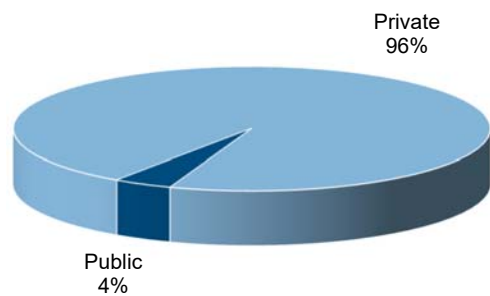
Note: Where available, March 31, 2020 reported valuations were used. In the absence of March 31, 2020 reported values, market values have been adjusted forward using interim cashflows through March 31, 2020. The IRR calculated in the early years of a fund is not meaningful given the j-curve effect. The aggregate portfolio performance figures for IRR and multiple are as of March 31, 2020.

Teachers' Retirement System of the City of New York Commitments By Vintage Year As of March 31, 2020

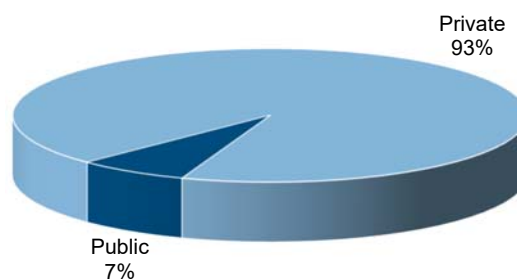


Teachers' Retirement System of the City of New York Public Vs. Private Holdings As of March 31, 2020

Based on Number of Companies ⁽¹⁾

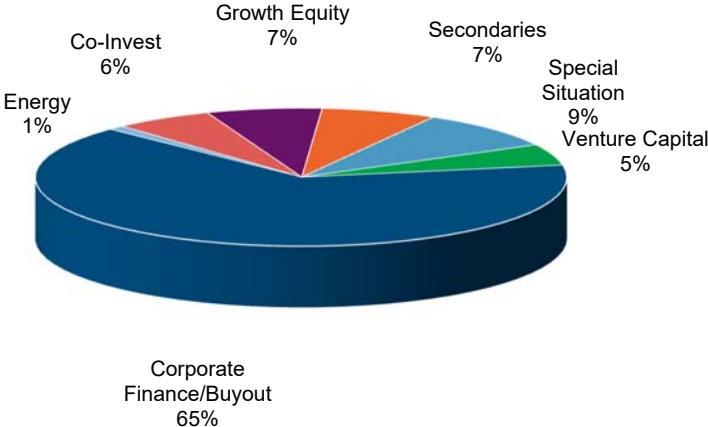


Based on Reported Market Value ⁽¹⁾

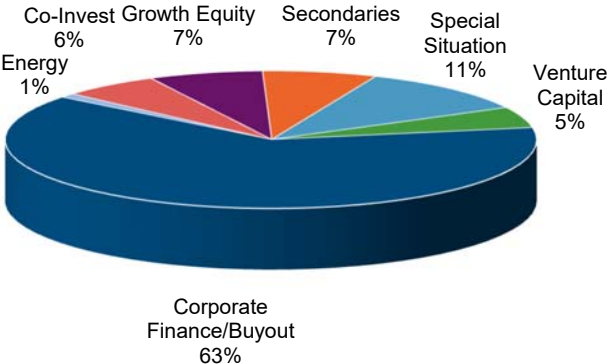


**Teachers' Retirement System of the City of New York
Portfolio Strategic Diversification As
Measured By Reported Market Value
As of March 31, 2020**

As of March 31, 2020



As of December 31, 2019



Teachers' Retirement System of the City of New York

First Quarter 2020 Report



Appendix A:

Glossary of Terms

Teachers' Retirement System of the City of New York

First Quarter 2020 Report

Additional Fees: The amount of capital an investor pays into a fund/investment that does not count against the investors' commitment. Additional fees typically consist of management fees or late-closing interest expense.

Capital Committed: An investor's financial obligation to provide a set amount of capital to the investment.

Capital Contributed: Capital contributed from an investor's capital commitment to fund partnership investments, organizational expenses and management fees.

Capital Distributed: Cash or stock disbursed to the investors of an investment.

Co/Direct Investment: A direct investment is a purchased interest of an operating company. A co-investment is a direct investment made alongside a partnership.

Corporate Finance/Buyout: Funds seeking to make controlling and non-controlling investments in established companies which have the potential to achieve greater value through improved performance.

Cost Basis: Capital contributions less return of principal.

Fund-of-Funds: An investment vehicle which invests in other private equity partnerships.

Fund/Investment Size: The total amount of capital committed by investors to a fund.

Investment Category: Used to identify investments in one of the following categories: co/direct investments, fund-of-funds, primary funds, secondary fund-of-funds or secondary purchases.

Investment Strategy: A sub-classification of a partnership's investment type, such as Co/Direct Investment, Corporate Finance/Buyout, Mezzanine, Real Estate, Special Situation, Venture Capital.

Life Cycle Period: The current stage of a partnership depending on the percentage contributed to date. Life cycle periods are investment and realization.

Mezzanine: An investment strategy involving the purchase of subordinated debt. These securities exist between the senior debt and equity of a holding's capital structure. Subordinated debt carries a lower level of risk than pure equity structures because they generate current income and have a more senior position in the company's capital structure.

Net Internal Rate Of Return ("IRR"): The discount rate that equates the net present value of the partnership's cash outflows with its inflows and residual value at the time of calculation. The calculation is net of management fees and the general partner's carried interest.

Originator: The institution responsible for recommending a client commit to an investment.

Ownership Percentage: The investor's percent of ownership as measured by capital committed divided by fund/investment size.

Paid-In Capital: The amount of capital an investor has contributed to a partnership, which includes capital contributions and additional fees.

Pooled Average IRR: An IRR calculation which aggregates cash flows (paid-in capital and capital distributed) and the reported market values of each investment within a portfolio to create one portfolio investment and return.

Portfolio Holding Exposure: The limited partner's pro rata allocation to an underlying investment based on the ownership percentage of the partnership.

Teachers' Retirement System of the City of New York

First Quarter 2020 Report

Primary Fund: Defines when the investor acquired an interest in the partnership. Primary fund is the investment category when an investor participates in a closing at the inception of the partnership.

Private Equity Partnership: A professionally managed pool of capital that generally invests in unlisted companies or securities. Common investment strategies include corporate finance/buyout, mezzanine, special situations and venture capital.

Realized Multiple: Ratio of cumulative distributions to paid-in capital.

Return On Investment ("ROI"): A calculation based on the total value (market value plus distributions) divided by paid-in capital for an investment.

Reported Market Value: The investment's capital account balance at quarter end, which includes the general partner's reported value of the underlying holdings and other assets and liabilities.

Secondary Fund-of-Funds: A private equity vehicle formed to purchase active partnership interests from an investor.

Secondary Purchase: A purchase of an existing partnership interest or pool of partnership interests from an investor.

Special Situation: Partnerships that invest using a unique strategy. Examples include distressed and turnaround, industry focused and multi-stage partnerships.

Total Exposure: Calculated by the summation of market value and unfunded commitments.

Venture Capital: An investment strategy that provides start-up or growth capital to companies in the early stages of development. Venture investments generally involve a greater degree of risk, but have the potential for higher returns.

Vintage Year: The year in which a partnership makes its first capital call for an investment into a portfolio company/holding.

Teachers' Retirement System of the City of New York
First Quarter 2020 Report



Appendix B:
Disclosure Statement

Teachers' Retirement System of the City of New York

First Quarter 2020 Report

Non-public information contained in this report is confidential and intended solely for dissemination to Teachers' Retirement System of the City of New York and/or its Affiliates. Hamilton Lane has prepared this report to enable Teachers' Retirement System of the City of New York and/or its Affiliates to assess the performance and status of its alternative investment portfolio. The calculations contained in this document are made by Hamilton Lane based on information provided by the general partner (e.g. cash flows and valuations), and have not been prepared, reviewed or approved by the general partners. Hamilton Lane hereby disclaims any liability resulting from any unauthorized dissemination of the attached information.

The information contained in this report may include forward-looking statements regarding the funds presented or their portfolio companies. Forward-looking statements include a number of risks, uncertainties and other factors beyond the control of the funds or the portfolio companies, which may result in material differences in actual results, performance or other expectations. The information presented is not a complete analysis of every material fact concerning each fund or each company. The opinions, estimates and analyses reflect our current judgment, which may change in the future.

All opinions, estimates and forecasts of future performance or other events contained herein are based on information available to Hamilton Lane as of the date of this presentation and are subject to change. Past performance of the investments described herein is not indicative of future results. Certain of the information included in this presentation has not been reviewed or audited by independent public accountants. Certain information included herein has been obtained from sources that Hamilton Lane believes to be reliable but the accuracy of such information cannot be guaranteed.

The past performance information contained in this report is not necessarily indicative of future results and there is no assurance that the funds will achieve comparable results or that they will be able to implement their investment strategy or achieve their investment objectives. The actual realized value of currently unrealized investments will depend on a variety of factors, including future operating results, the value of the assets and market conditions at the time of disposition, any related transaction costs and the timing and manner of sale, all of which may differ from the assumptions and circumstances on which the current unrealized valuations are based.

Any tables, graphs or charts relating to past performance included in this report are intended only to illustrate the performance of the funds or the portfolio companies referred to for the historical periods shown. Such tables, graphs and charts are not intended to predict future performance and should not be used as the basis for an investment decision.



Hamilton Lane

Philadelphia

One Presidential Blvd.
4th Floor
Bala Cynwyd, PA 19004
USA
+1 610 934 2222

London

8-10 Great George Street
London SW1P 3AE
United Kingdom
+44 (0) 207 340 0100

Tel Aviv

6 Hahoshlim Street
Hertzelia Pituach, 4672201
Building C 7th Floor
P.O. Box 12279
Israel
+00 972-73-2716610

San Francisco

201 California Street, Suite 550
San Francisco, CA 94111
USA
+1 415 365 1056

New York

610 Fifth Avenue, Suite 401
New York, NY 10020
USA
+1 212 752 7667

San Diego

7817 Ivanhoe Avenue
Suite 310
La Jolla, CA 92037
USA
+1 858 410 9967

Tokyo

13F, Marunouchi Bldg.
2-4-1, Marunouchi
Chiyoda-ku
Tokyo 100-6313, Japan
+81 (0) 3 5860 3940

Miami

999 Brickell Avenue
Suite 720
Miami, Florida 33131
USA
+1 954 745 2780

Hong Kong

Room 1001-3, 10th Floor
St. George's Building
2 Ice House Street
Central Hong Kong, China
+852 3987 7191

Rio de Janeiro

Av. Niemeyer 2, Sala 102
Leblon Rio de Janeiro
Brasil 22450-220
+55 21 3520 8903

Las Vegas

3753 Howard Hughes Parkway
Suite 200
Las Vegas, NV 89169
USA
+1 702 784 7690

Seoul

12F, Gangnam Finance Center
152 Teheran-ro, Gangnam-gu
Seoul 06236
Republic of Korea
+82 2 6191 3200

Sydney

Level 36, Governor Phillip Tower,
1 Farrer Place,
Sydney, NSW 2000
Australia
+61 2 8823 3741

Munich

Leopoldstrasse 8-10
80802 Munich
Germany
+49 89 954537901

Portland

15350 SW Sequoia Pkwy
Suite 260
Portland, OR 97224
USA
+1 503 624 9910

Toronto

150 King St. West
Suite 200
Toronto, Ontario
Canada
M5HJ89
+1 647 715 9457

Real Estate Quarterly Report (Public):



Quarterly Real Estate Report

For the period ended March 31, 2020



Teachers' Retirement System of the City of New York

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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.

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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 data is as of **March 31, 2020**, unless otherwise noted.

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

Executive Summary

StepStone Group LP (“StepStone”) was engaged by Teachers’ Retirement System of the City of New York (“NYCTRS”) to provide Real Estate services for prospective investment opportunities, as well as portfolio management on NYCTRS’ portfolio (the “Portfolio”). Inception date of the Portfolio was on December 2002.

The following table illustrates the Portfolio's since inception investment performance as of March 31, 2020 as well as the change in performance from the prior quarter-end and the end of the same quarter in the prior year. The Portfolio’s since inception net Internal Rate of Return (“IRR”) now stands at 8.6% at March 31, 2020, which is down 71 basis points quarter-over-quarter.

Performance Summary

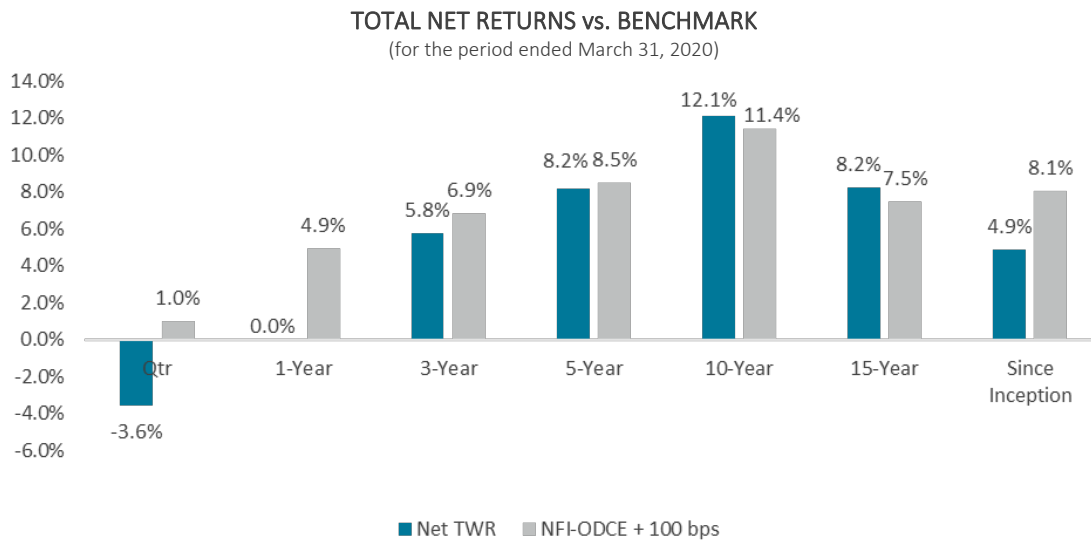
	Q1 2020	Q4 2019	Q1 2019	Quarterly Change	Yearly Change
No. of Managers	49	49	46	0	3
No. of Investments	88	83	76	5	12
No. of Active Managers	43	43	41	0	2
No. of Active Investments	78	73	68	5	10
<i>Active investments only</i> <i>(in USD millions)</i>					
Committed Capital	5,791.5	5,340.2	4,579.8	451.4	1,211.7
Contributions	4,091.4	3,979.5	3,470.6	111.8	620.8
Distributions	2,351.2	2,241.8	1,946.6	109.4	404.6
Net Asset Value	2,988.1	3,095.9	2,769.6	-107.8	218.5
Total Gain	1,248.0	1,358.2	1,245.7	-110.2	2.3
Unfunded	2,163.0	1,806.8	1,499.5	356.2	663.4
Total Exposure	5,151.1	4,902.7	4,269.1	248.4	881.9
<i>Since Inception Returns, includes liquidated investments</i>					
DPI	0.6x	0.6x	0.6x	0.01x	0.00x
TVM Gross of Fees	1.43x	1.46x	1.50x	-0.04x	-0.07x
IRR Gross of Fees	11.2%	12.4%	12.9%	-1.22%	-1.71%
TVM Net of Fees	1.33x	1.39x	1.39x	-0.06x	-0.06x
IRR Net of Fees	8.6%	9.3%	9.7%	-0.71%	-1.10%

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.

- Number of Managers and Investments include active funds. Liquidated funds are not included.
- Committed Capital represents original commitments to partnership investments.
- Unfunded Commitment represents the aggregate remaining commitments to partnership investments.
- Total Exposure represents the sum of Market Value and Unfunded Commitment.
- DPI, or Distributed to Paid-In Multiple, is a performance metric that measures distributions received relative to capital interest. DPI is calculated as Distributions divided by Contributions.
- TVM, or Total Value Multiple, is a performance metric that measures total value created by the Portfolio relative to Contributions, without consideration for time. TVM is calculated as Total Value, which is comprised of Market Value plus Distributions, divided by Contributions.
- 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.
- TVM and IRR Net of fees represent TVM and IRR net of fees.
- DPI, TVM and IRR are since inceptions values up until the current quarter.

Portfolio Performance vs Benchmarks

The Portfolio's Total Time Weighted Returns ("TWR") are measured against the NFI-ODCE benchmark plus 100 basis points. The NCREIF Fund Index – Open End Diversified Core Equity ("NFI-ODCE") is a capitalization weighted return index with an inception date of December 31, 1977. The NFI-ODCE contains data from 24 core, open-end funds investing in the United States. For the current quarter, the NFI-ODCE contained performance data from 2,910 investments, totaling over \$256.1 billion of gross real estate assets. The NFI-ODCE differs from the NCREIF Property Index because it includes leverage, reports returns gross and net of fees, and all reporting funds must qualify according to the NFI-ODCE diversification and other standards (e.g., fund level leverage below 40%). The referenced benchmark is shown for general market comparison and is not meant to represent any particular fund. An investor cannot directly invest in the NFI-ODCE index. Moreover, the benchmark does 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 inception date is 4Q 2002

Portfolio Diversification

The following charts outline the Portfolio's diversification by strategy and geographic regions, the limits of which are governed by the Policy Statement and Annual Plan. Funds that do not yet have NAVs are not included in the Allocation by Region analysis.

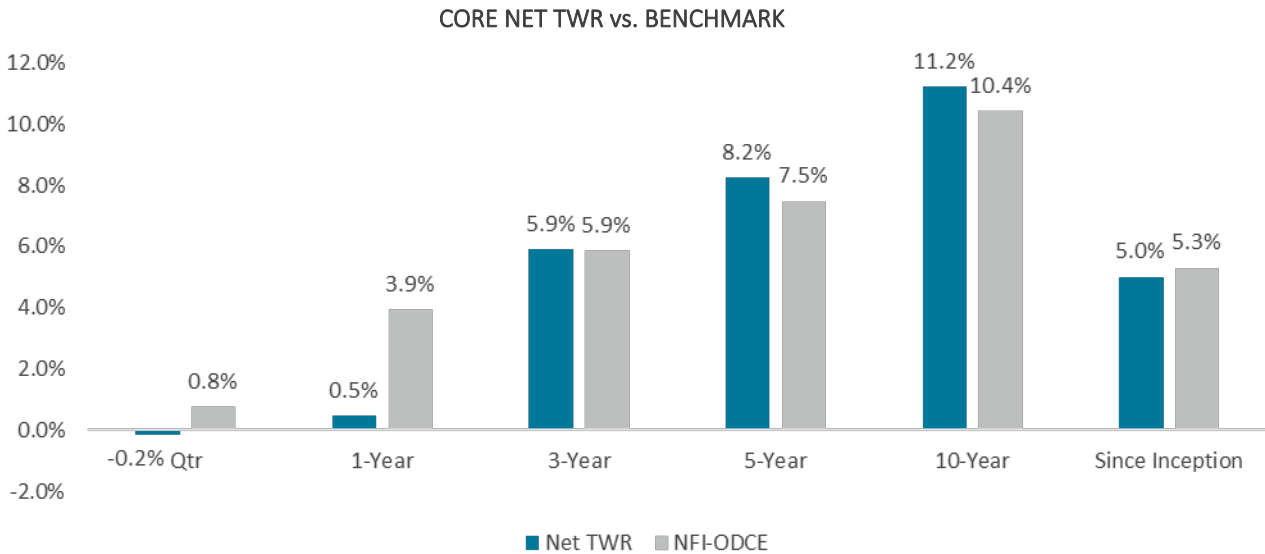
(in USD millions)

Allocation by Strategy	Net Asset Value		Unfunded		Total Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
Core	1,936.2	65%	350.5	16%	2,286.7	44%
Non-Core	1,051.9	35%	1,812.5	84%	2,864.4	56%
Total	2,988.1	100%	2,163.0	100%	5,151.1	100%
Emerging	92.1	3%	286.5	13%	378.6	7%
Debt	323.5	11%	252.4	12%	576.0	11%

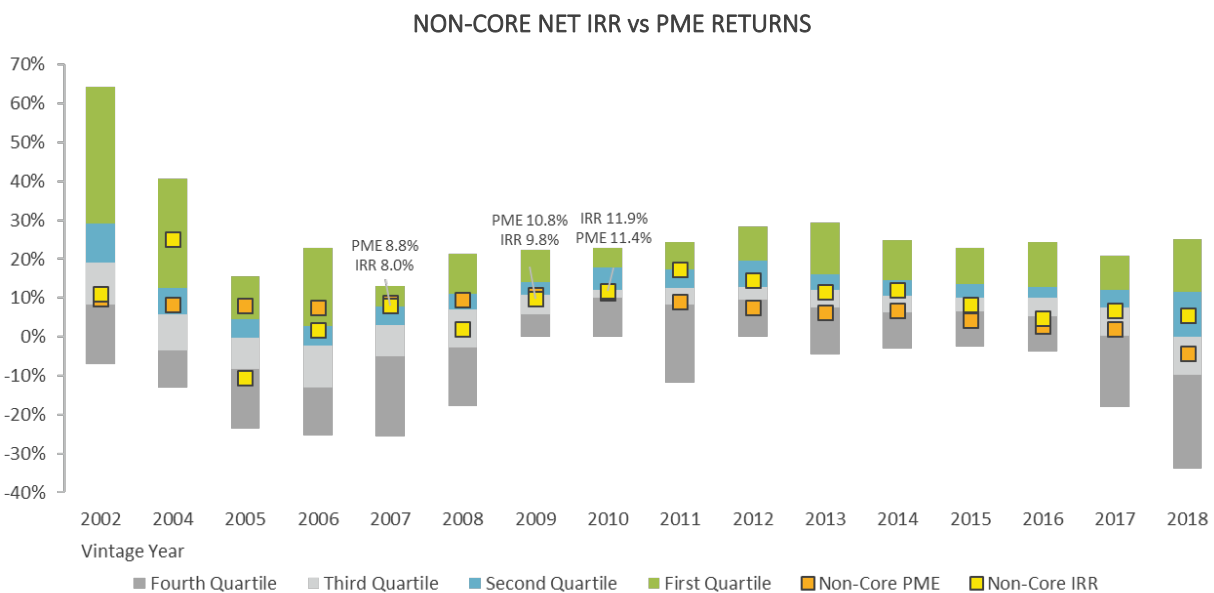
Allocation by Region	Net Asset Value		Unfunded		Total Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
North America	2,728.9	91%	1,975.3	91%	4,704.3	91%
Europe	214.3	7%	155.1	7%	369.4	7%
Asia	41.1	1%	29.8	1%	70.9	1%
Rest of World	3.8	0%	2.7	0%	6.5	0%
Total	2,988.1	100%	2,163.0	100%	5,151.1	100%

Core and Non-Core Performance vs Benchmarks

The following graphs measure the Portfolio's Core and Non-Core performance against chosen benchmarks. The Portfolio's Core Time Weighted Returns are benchmarked against the NFI-ODCE. The Portfolio uses IRR by vintage year as a measurement of its Non-Core performance. A public market equivalent ("PME") of 60% Russell 3000 and 40% Barclays Capital Aggregate Bond Index is used to measure the Portfolio's Non-Core Performance. The PME is calculated using the Portfolio cash flows to produce a return that would have been earned if the Portfolio cash flows were invested in the PME.



-Core Portfolio inception date is 4Q 2006



The referenced indices/benchmarks 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 Profile

New York City Teachers Retirement Systems has allocated 7.0% of the total plan to Real Estate. The Real Estate Portfolio's objective is to generate a total net return that exceeds the Benchmark NFI-ODCE +100 bps total net return measured over full market cycles.

NYC TRS - Real Estate	
Total Plan Assets (\$)	\$73,652,890,000
Real Estate Allocation (%)	7.0%
Real Estate Allocation (\$)	\$5,155,702,300
Real Estate Core Allocation (%)	3.0%
Real Estate Core Allocation (\$)	\$2,209,586,700
Real Estate Non-Core Allocation (%)	4.0%
Real Estate Non-Core Allocation (\$)	\$2,946,115,600
No. of Active Managers	43
No. of Active Investments	78

Core/Core-Plus	
Net Asset Value	\$1,936,222,099
Unfunded	\$350,494,563
Commitment	\$2,088,135,733
Total Exposure	\$2,286,716,662
Total Exposure as a % of Target	103.5%
NAV as a % of Target	87.6%
% Plan Assets (NAV / Exposure)	2.6% / 3.1%

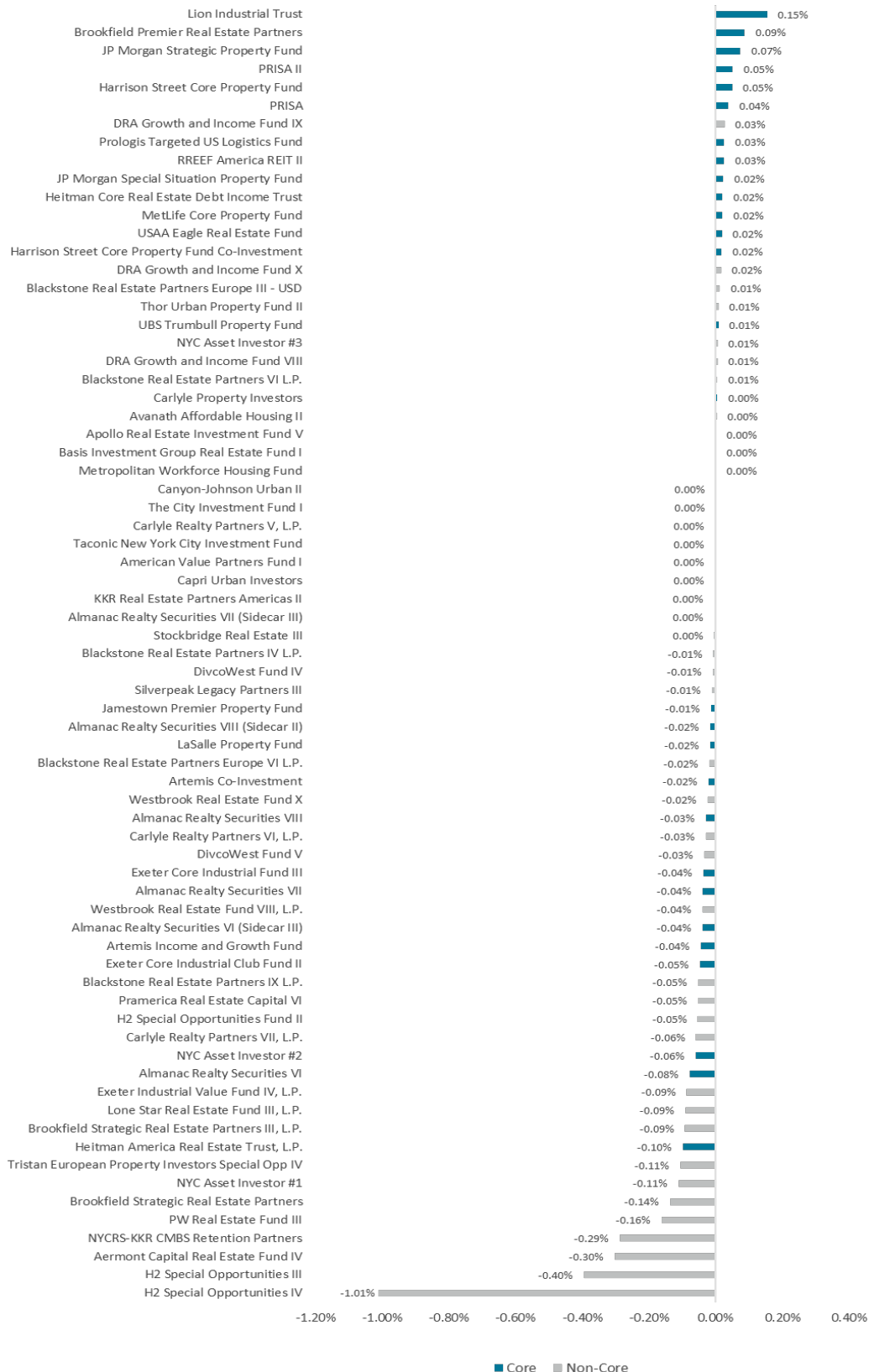
Non-Core	
Net Asset Value	\$1,051,897,187
Unfunded	\$1,812,461,013
Commitment	\$3,703,400,248
Total Exposure	\$2,864,358,200
Total Exposure as a % of Target	97.2%
NAV as a % of Target	35.7%
% Plan Assets (NAV / Exposure)	1.4% / 3.9%

Total Portfolio	
Net Asset Value	\$2,988,119,286
Unfunded	\$2,162,955,576
Commitment	\$5,791,535,981
Total Exposure	\$5,151,074,862
Total Exposure as a % of Target	99.9%
NAV as a % of Target	58.0%
% Plan Assets (NAV / Exposure)	4.1% / 7%

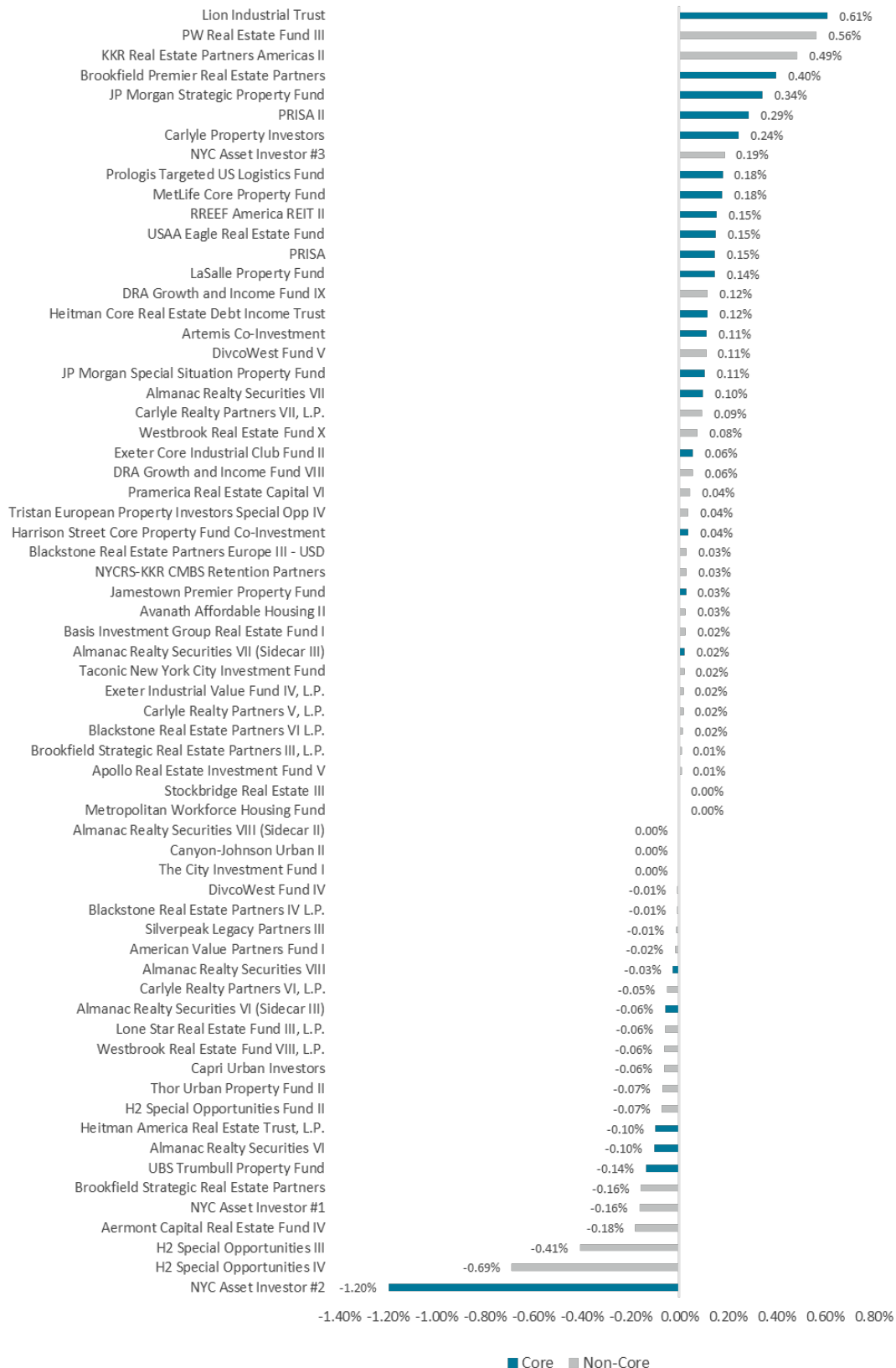
Net Returns	
Quarterly TWR	-3.6%
1-Year TWR	0.0%
2-Year TWR	3.6%
3-Year TWR	5.8%
5-Year TWR	8.2%
10-Year TWR	12.1%
15-Year TWR	8.2%
ITD TWR	4.9%
ITD Benchmark NFI-ODCE + 100 bps	8.1%
Net IRR	8.6%
TVM	1.3x

Note: Beginning in Q1-2020, Total, Core/Core-Plus, and Non-Core real estate allocations change to 7%, 3%, and 4%, respectively.

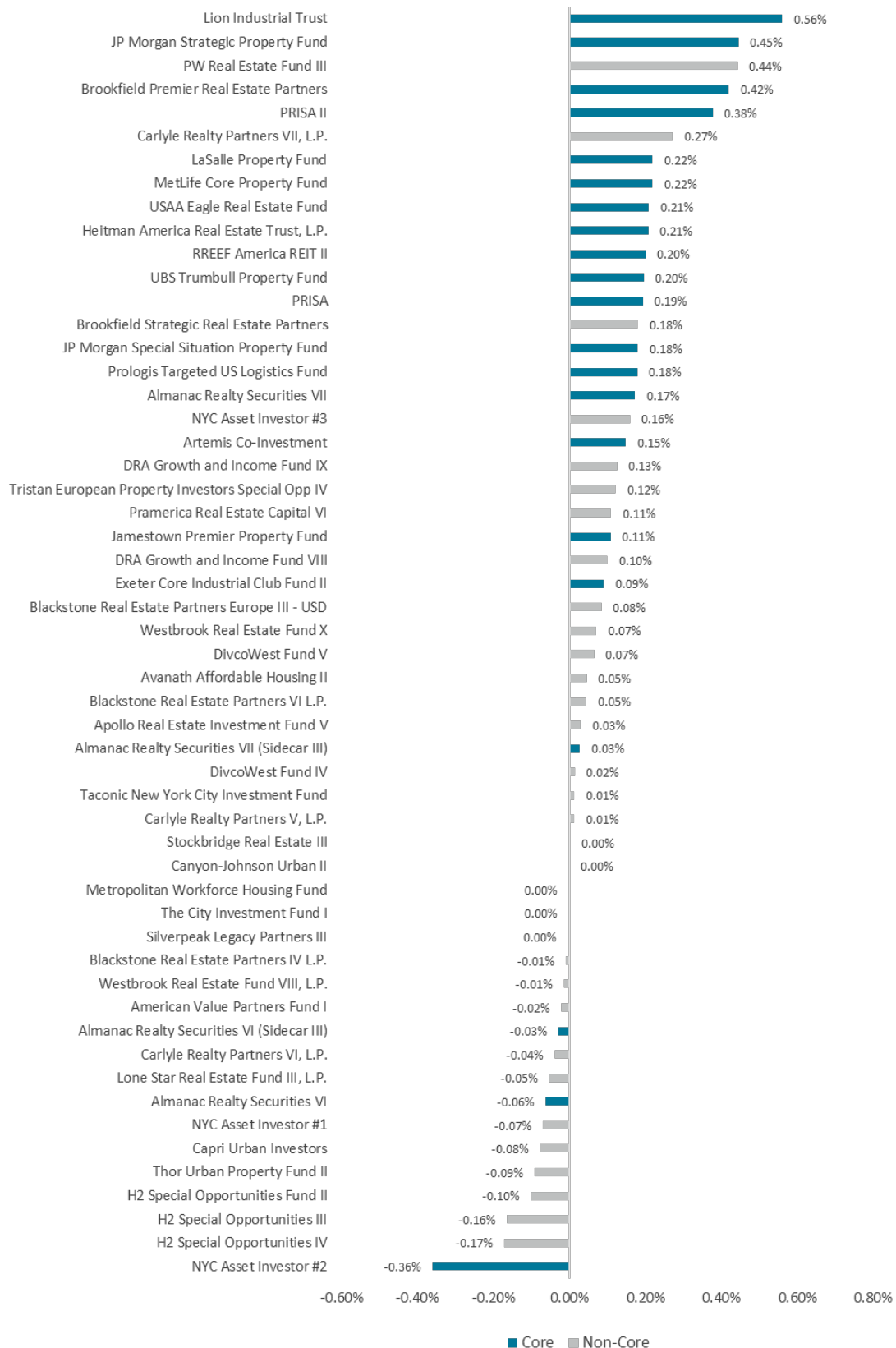
Percent Contribution to Current-Quarter Return



Fund Contribution to Portfolio Return: Percent Contribution to 1-Year Return



Percent Contribution to 3-Year Return



Portfolio Compliance Checklist

Category	Requirement	Portfolio Status
Benchmark	Comprised of NFI-ODCE +100 bps	Portfolio returns outperform the benchmark over the ten and fifteen-year time periods.
Portfolio Construction	Core/Core-Plus (3%)	Market value plus committed commitment place the Portfolio at 44.4% Core/Core-Plus and 55.6% Non-Core. Based on market value, the Portfolio is 64.8% Core/Core-Plus and 35.2% Non-Core.
	Non-Core (4%)	
Real Estate Allocation	Target 7%	Market value plus committed capital place the Portfolio at 7% of total plan assets.
Property Type Diversification	Up to 40% Multifamily Up to 35% Industrial Up to 45% Office Up to 35% Retail Up to 25% Hotel Up to 20% Other	All property type allocations are compliant.
Geographic Diversification	Diversified geographically; Max 25% Ex-U.S.	All geographic allocations are compliant.
LTV	65.0%	The leverage (37.4%) is compliant.
Manager Exposure	20% of real estate allocation	All manager allocations are compliant.

Note: Beginning in Q1-2020, Total, Core/Core-Plus, and Non-Core real estate allocations change to 7%, 3%, and 4%, respectively.



StepStone Real Estate
 Market Commentary
 Spring 2020

The spread of COVID-19 had a profound impact on global economies and markets during the first quarter of 2020. Equities and bond yields suffered both steep declines not seen since the Global Financial Crisis and record volatility, as the global pandemic forced countries into lockdowns in order to contain the outbreak. While the COVID-19 pandemic continues to cause significant disruption in nearly every aspect of the world economy, several countries have begun to ease quarantines and social distancing guidelines in an effort to restore economic activity. However, there remains hesitancy in a return to normalcy due to fear of a potential “second wave” of infections.

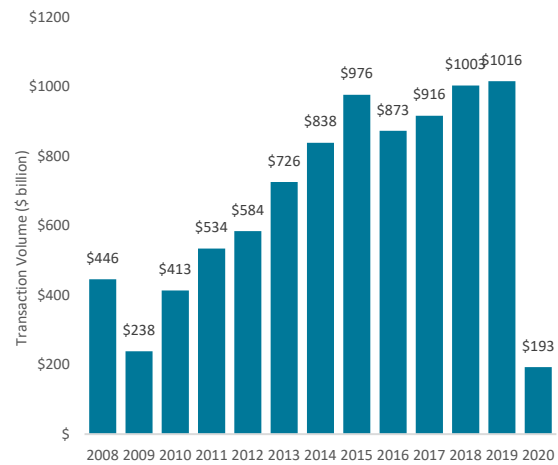
Uncertainty regarding the pandemic’s economic impact sent the Chicago Board Option Exchange’s Volatility Index (“VIX”) to an all-time high and countries across the world approve massive stimulus packages to help combat the global economic shutdown. Oil prices also plunged during the quarter, as talks between OPEC and other oil producers failed to reach an agreement on extensions to production cuts coinciding with, and exacerbated by, weaker demand due to the virus. While the stock markets have seen a V-shape recovery in recent months, it remains to be seen how long it will take for economies around the world to fully recover. As of this writing, the U.S. unemployment rate is at its highest level since the Great Depression.

All global equity indices declined in Q1 2020, led by the MSCI Europe Index declining 24.8%, as the virus shutdown an economy that was already struggling with economic growth. The MSCI Emerging Markets Index followed suit, falling 23.9%, as COVID-19 became a pandemic and the prospect of a global recession loomed. Meanwhile, the S&P 500 Total Return Index tumbled 19.6%, as confirmed U.S. cases rose to over 100,000 and jobless claims soared above three million in the last week of March. In response, the Federal Reserve cut interest rates to 0% and announced unlimited quantitative easing. The U.S. Congress also passed a historic US\$2.2 trillion stimulus package that included US\$250.0 billion for households, US\$500.0 billion for loans to distressed

companies and US\$350.0 billion for small business loans.

GDP fell by -3.4% in 1Q20, up slightly from the prior quarter. The 10-Year Treasury yield finished March at 0.67%, down 125 bps from year end. Global real estate transaction volume fell -1% from 1Q19 to 1Q20 to \$193 billion.

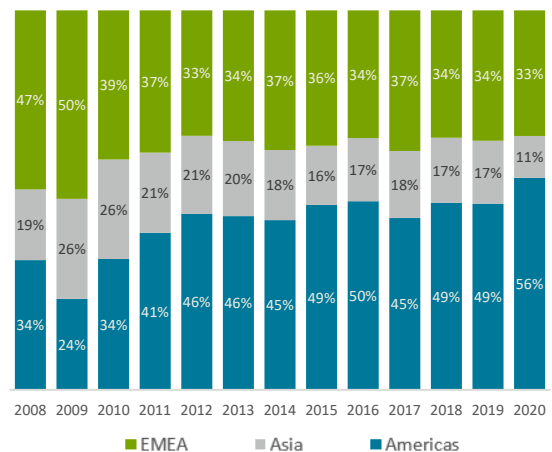
Figure 1| Annual Global Transaction Volume



Source: Real Capital Analytics (3/31/20)

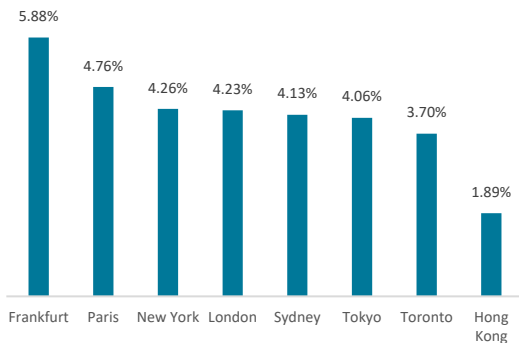
North America posted 56% of Global volume, marking the fifth straight quarter for North America to represent a majority of transaction activity. The Asia region, which was impacted by COVID for most of the first quarter, was down -49% over that period to \$21 billion. Transactions in the Americas were up 17% to \$108 billion in the quarter.

Figure 2| Regional Share of Global Transaction Volume



The dramatic decline in interest rates have led to widening cap rate spreads across most regions. The cap rate spread in Frankfurt was highest among major global developed markets, ending the quarter at 5.88%. In contrast, Hong Kong ended the quarter with the lowest cap rate spread at 1.89%. The cap rate spread for New York Office was 4.26% as of March 31, 2020.

Figure 3 | Office Cap Rate Spread to 10 Year Sovereign Debt

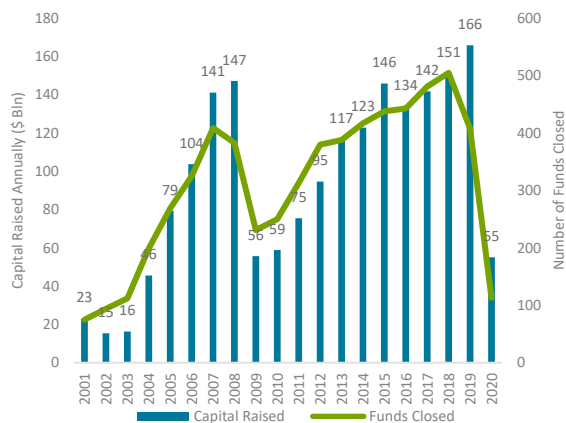


Source: Bloomberg (3/31/20)

Fundraising and Dry Powder

There were 113 funds closed through June 2020, which is on pace to fall well below 2019 levels. The \$55 billion raised in 1H20 is also below the 2018/19 levels.

Figure 4 | Real Estate Funds Closed by Year

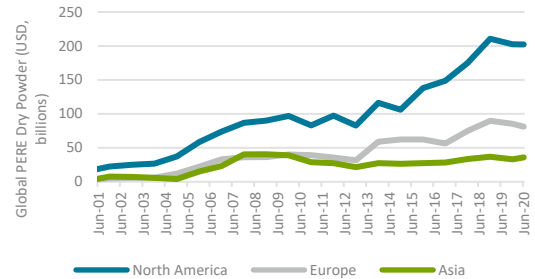


Source: Preqin (6/30/20)

Dry powder dropped a bit in the first half of 2020 to \$202 billion for North American and \$81 billion for

Europe. Asia dry powder increased to \$36 billion as transaction activity stalled in the region.

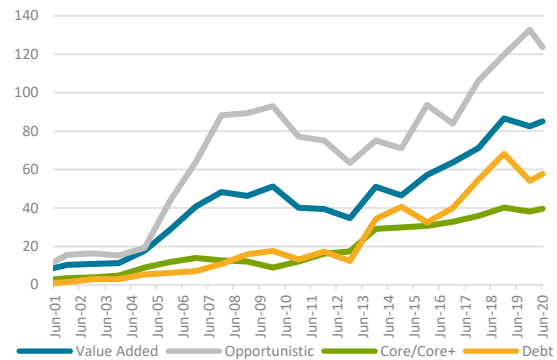
Figure 5 | Dry Powder – By Region



Source: Preqin (6/30/20)

Opportunistic, which has the largest amount of dry powder, saw a decline in reserve capital to \$123 billion. Value add ticked up slightly to \$85 billion.

Figure 6 | Dry Powder – By Strategy



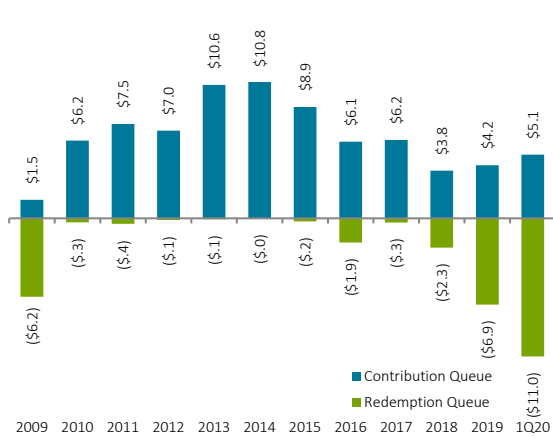
Source: Preqin (6/30/20)

Shift from Core and Gateway Markets

Contribution queues (\$5.1 billion) to US Core Open-Ended funds are lower than redemption queues (\$11.0 billion), which are at record lows.

Of the twenty-five ODCE funds, sixteen have contribution queues and ten have redemption queues. One fund in particular makes up \$8.8 billion of the redemption queue.

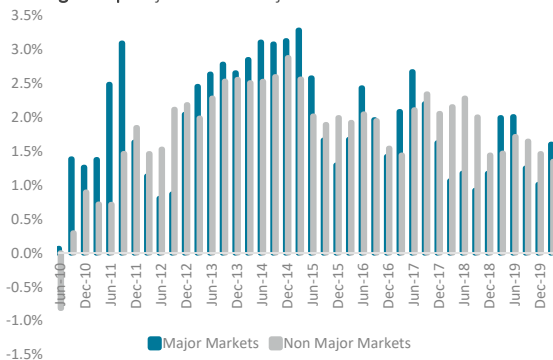
Figure 7 | Core Contribution and Redemption Queues (\$bil.)



Source: StepStone Real Estate (3/31/20)

Price movement for the Major Markets of Boston, New York, Washington DC, Chicago, San Francisco and Los Angeles (+1.6%) exceeded Non-Major Markets (+1.4%) in the quarter. Price movement lifted the CPPI Apartment Index (2.5%), outpacing the CPPI Industrial Index (1.8%).

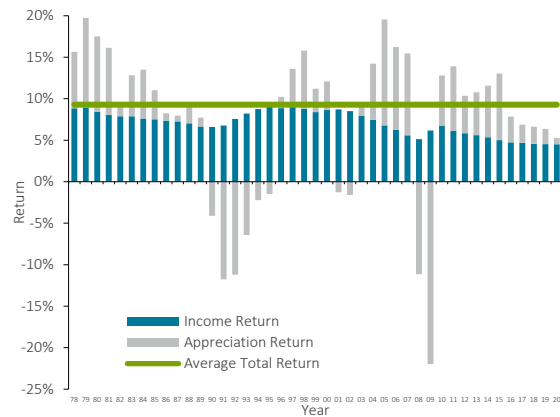
Figure 8 | Major vs Non-Major Market



Source: Moody's Commercial Property Price Index (3/31/20)

With falling yields and slowing appreciation, one-year total returns for NCREIF through the first quarter of 6.42% were below the long-term historical income returns of 7.14%.

Figure 9 | NCREIF Return Components



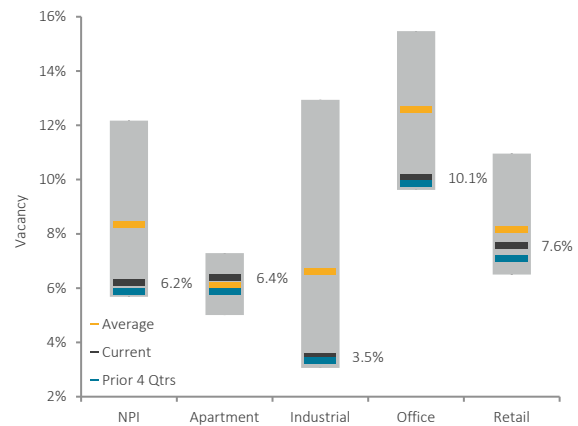
Source: NCREIF (3/31/20)

US Fundamentals Remain Strong

For the first time in over a decade one of the four main property types produced a negative annual total return in the four quarters ending in March as Retail declined -1.9%. Industrials led with 12.9%, followed by Office (6.2%), and Apartments (5.1%). The decline in the retail the Retail sector was driven primarily by the appreciation return of -6.4%. Conversely, there was an 8.0% appreciation gain for Industrials over the four quarters.

Vacancy rose in all four property type and is above last year's levels. Vacancy is highest for Office (10.1%), followed by Retail (7.6%) Apartments (6.4%) and Industrial (3.5%).

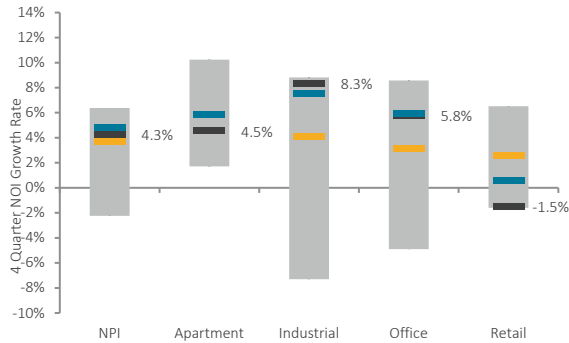
Figure 10 | US Vacancy



Source: NCREIF (3/31/20) Data reflect the prior 40 quarters.

Industrial NOI Growth has been above 6% for nineteen straight quarters. NOI Growth is above average for Industrials (8.3%) and Office (5.8%). Retail NOI Growth was negative in the quarter (-1.5%)

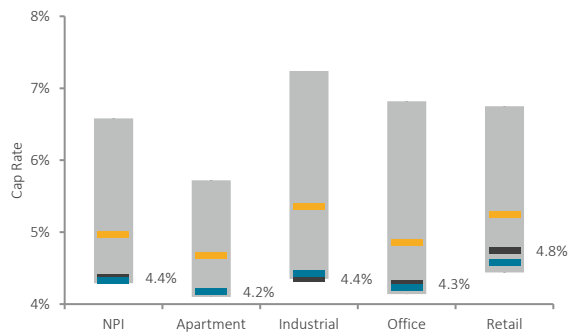
Figure 11 | Four Quarter NOI Growth



Source: NCREIF (3/31/20) Data reflect the prior 40 quarters.

NPI cap rates came off of the record lows of last quarter and rose slightly to (4.4%). Industrial (4.4%) cap rates are at 10-year lows.

Figure 12 | Cap Rates



Source: NCREIF (3/31/20) Data reflect the prior 40 quarters.

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Manager references herein are for illustrative purposes only and do not constitute investment recommendations.

Portfolio Review

Quarterly Highlights

Cash Flow Activity

- During the first quarter of 2020, the Portfolio made US\$111.8 million of contributions and received US\$109.4 million of distributions, for a net cash outflow of US\$2.4 million, compared to a net cash outflow of US\$124.4 million during the fourth quarter of 2019. Contributions decreased 57.8% from the prior quarter and increased 0.2% from the first quarter of 2019. The Last-Twelve-Months (“LTM”) quarterly average of the Portfolio's contributions is US\$166.1 million. Distributions decreased 22.3% from the prior quarter and increased 52.8% from the first quarter of 2019. The LTM quarterly average of the Portfolio's distributions is US\$111.2 million.

Recent Portfolio Activity

- During the first quarter of 2020, net of cash flow activity, the Portfolio's value decreased US\$110.2 million, or 3.6%, from the prior quarter. During the LTM period, net of cash flow activity, the Portfolio's value decreased US\$0.8 million, or less than 0.1%, from the first quarter of 2019.

New Investment Commitments

- During the first quarter of 2020, the Portfolio closed on the following new investment commitments, totaling \$401 million.

(in USD millions)

Fund Name	Month Closed	Sub-Strategy	Geographic Focus	Committed Capital
DivcoWest Fund VI	January 2020	Non-Core	North America	\$93
DRA Growth and Income Fund X	February 2020	Non-Core	North America	\$67
Exeter Industrial Value Fund V	February 2020	Non-Core	North America	\$56
KKR Real Estate Partners Europe II	February 2020	Non-Core	Europe	\$89
Pramerica Real Estate Capital VII	February 2020	Non-Core	Europe	\$96

Subsequent Investment Commitments

- Following the second quarter of 2020, the Portfolio closed on the following new investment commitment, totaling \$123 million.

(in USD millions)

Fund Name	Month Closed	Sub-Strategy	Geographic Focus	Committed Capital
Redacted Fund 1	April 2020	Core	North America	\$123

Since Inception Investment Performance

(in USD millions; includes all investments)

	Q1 2020	Q4 2019	Q1 2019	Quarterly Change	Yearly Change
No. of Managers	49	49	46	0	3
No. of Investments	88	83	76	5	12
Committed Capital	6,113.9	5,662.5	4,862.2	451.4	1,251.7
Contributions	4,341.0	4,229.2	3,676.8	111.8	664.2
Distributions	2,800.6	2,691.2	2,355.7	109.4	445.0
Net Asset Value	2,988.1	3,095.9	2,769.6	-107.8	218.5
Total Gain	1,447.8	1,558.0	1,448.5	-110.2	-0.8
Unfunded	2,163.0	1,806.8	1,499.5	356.2	663.4
Total Exposure	5,151.1	4,902.7	4,269.1	248.4	881.9
DPI	0.6x	0.6x	0.6x	0.0x	0.0x
TVM Gross of Fees	1.43x	1.46x	1.50x	-0.04x	-0.07x
IRR Gross of Fees	11.2%	12.4%	12.9%	-1.2%	-1.7%
TVM Net of Fees	1.33x	1.37x	1.39x	-0.03x	-0.06x
IRR Net of Fees	8.6%	9.3%	9.7%	-0.7%	-1.1%

Portfolio Periodic Returns vs Benchmark

	Qtr	1-Year	3-Year	5-Year	10-Year	Since Inception
Net TWR	-3.6%	0.0%	5.8%	8.2%	12.1%	4.9%
NFI-ODCE + 100 bps	1.0%	4.9%	6.9%	8.5%	11.4%	8.1%
Outperformance (Underperformance)	-4.6%	-5.0%	-1.1%	-0.3%	0.7%	-3.2%

Performance by Vintage Year

The following table and chart illustrate the Portfolio's since inception investment performance by vintage year as of March 31, 2020, relative to a blended PME benchmark comprised of Russell 3000 and Barclays Capital Aggregate Bond Index at a 50/50 ratio. The PME benchmark is used to measure the Portfolio's performance, using the respective vintage year Portfolio cash flows to produce a return that would have been earned if those same vintage year cash flows were invested in the PME.

(in USD millions; Includes liquidated investments)

Vintage Year	Commitment	Contributions	Distributions	NAV	Unfunded	Exposure	TVM	DPI	IRR	PME Returns	PME Spread
2002	15.0	13.7	16.4	0.0	0.0	0.0	1.2x	1.2x	11.1%	8.8%	2.3%
2004	245.0	222.7	416.3	0.9	0.0	0.9	1.9x	1.9x	25.1%	7.7%	17.4%
2005	30.0	27.0	11.9	0.1	3.0	3.1	0.4x	0.4x	-10.4%	7.6%	-18.0%
2006	294.0	419.5	321.4	358.1	0.5	358.6	1.6x	0.8x	5.8%	6.9%	-1.1%
2007	265.4	318.6	264.5	233.0	15.5	248.5	1.6x	0.8x	6.2%	7.2%	-1.0%
2008	158.9	121.8	111.8	25.3	10.2	35.5	1.1x	0.9x	2.1%	8.7%	-6.5%
2009	90.0	103.4	122.1	8.0	4.3	12.3	1.3x	1.2x	9.8%	9.7%	0.1%
2010	129.0	128.7	55.9	126.1	0.0	126.1	1.4x	0.4x	9.8%	7.0%	2.8%
2011	110.0	115.8	166.3	7.1	23.0	30.1	1.5x	1.4x	17.4%	8.0%	9.4%
2012	330.0	234.6	292.3	64.1	64.6	128.7	1.5x	1.2x	13.3%	7.2%	6.2%
2013	561.0	492.8	380.8	250.0	66.4	316.4	1.3x	0.8x	8.6%	6.0%	2.6%
2014	365.0	370.6	283.6	226.1	84.2	310.3	1.4x	0.8x	11.0%	6.1%	5.0%
2015	258.2	237.2	72.9	225.3	42.7	268.0	1.3x	0.3x	9.1%	5.4%	3.7%
2016	702.0	620.4	151.1	572.6	146.1	718.8	1.2x	0.2x	8.6%	4.8%	3.7%
2017	451.4	454.7	68.8	478.3	33.5	511.8	1.2x	0.2x	9.6%	4.1%	5.5%
2018	708.2	250.2	37.7	221.5	474.1	695.6	1.0x	0.2x	4.1%	-0.6%	4.8%
2019	984.8	184.0	3.2	181.2	804.1	985.3	1.0x	0.0x	NM	NM	NM
2020	401.0	10.3	0.0	10.4	390.7	401.1	1.0x	0.0x	NM	NM	NM
Total	6,113.9	4,341.0	2,800.6	2,988.1	2,163.0	5,151.1	1.3x	0.6x	8.6%	6.7%	1.9%

The PME Spread is calculated as the IRR minus the blended PME. Performance of funds that are less than one year old are not meaningful. Note that Russell 3000 and Barclays Capital Aggregate Bond Index data are continuously updated and are therefore subject to change.



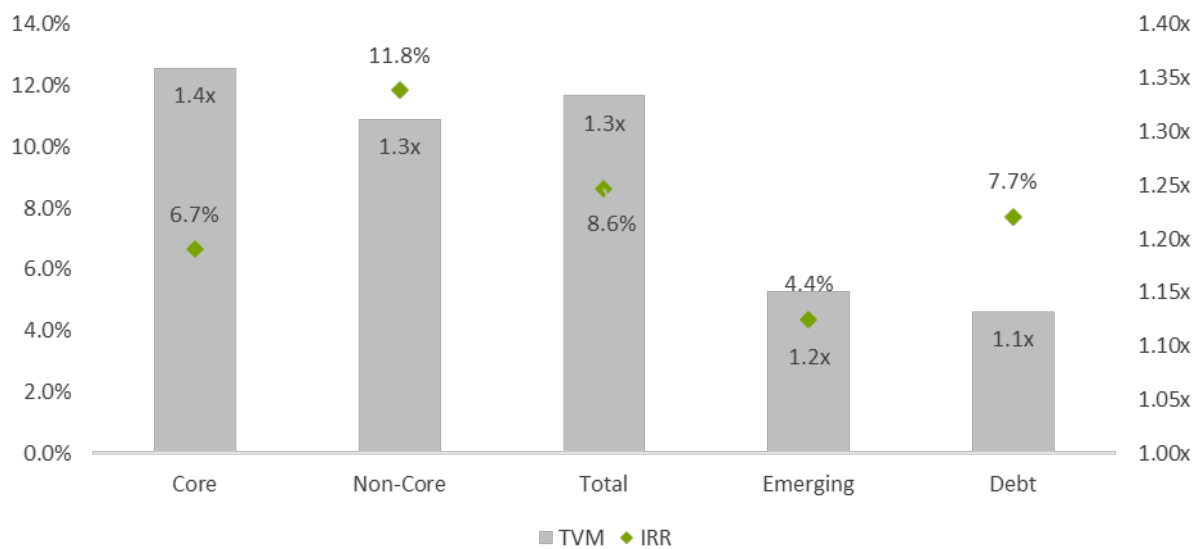
Performance by Strategy

The following table and charts illustrate the Portfolio's since inception investment performance by strategy and sub-strategy as of March 31, 2020.

(in USD millions; Includes liquidated investments)

Strategy	No. of		Contributions	Distributions	NAV	Unfunded	Exposure	TVM	IRR	PME		
	Investments	Commitment								PME	Spread	Leverage
Core	31	2,118	1,981	757	1,936	350	2,287	1.4x	6.7%	6.1%	0.6%	31%
Non-Core	57	3,996	2,360	2,043	1,052	1,812	2,864	1.3x	11.8%	7.5%	4.3%	49%
Total	88	6,114	4,341	2,801	2,988	2,163	5,151	1.3x	8.6%	6.7%	1.9%	37%
Emerging	7	410	143	72	92	287	379	1.2x	4.4%	N/A	N/A	N/A
Debt	9	868	641	403	324	252	576	1.1x	7.7%	N/A	N/A	N/A

The following chart illustrates the IRR and TVM of the Portfolio's various strategies and sub-strategies side by side. Both metrics are important to measure investment returns. IRR takes into account the time value of money and is generally favored by investors that are more yield driven over shorter investment horizons. The TVM equity multiple is the ratio of distributions plus current market value over the amount of capital contributed.



Portfolio Diversification

The following charts outline the Portfolio's diversification by strategy and geographic regions, the limits of which are governed by the Policy Statement and Annual Plan. Fund's that do not yet have NAV are not included in the Allocation by Region analysis.

(in USD millions)

Allocation by Strategy	Net Asset Value		Unfunded		Total Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
Core	1,936.2	65%	350.5	16%	2,286.7	44%
Non-Core	1,051.9	35%	1,812.5	84%	2,864.4	56%
Total	2,988.1	100%	2,163.0	100%	5,151.1	100%
Emerging	92.1	3%	286.5	13%	378.6	7%
Debt	323.5	11%	252.4	12%	576.0	11%

Allocation by Region	Net Asset Value		Unfunded		Total Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
North America	2,728.9	91%	1,975.3	91%	4,704.3	91%
Europe	214.3	7%	155.1	7%	369.4	7%
Asia	41.1	1%	29.8	1%	70.9	1%
Rest of World	3.8	0%	2.7	0%	6.5	0%
Total	2,988.1	100%	2,163.0	100%	5,151.1	100%

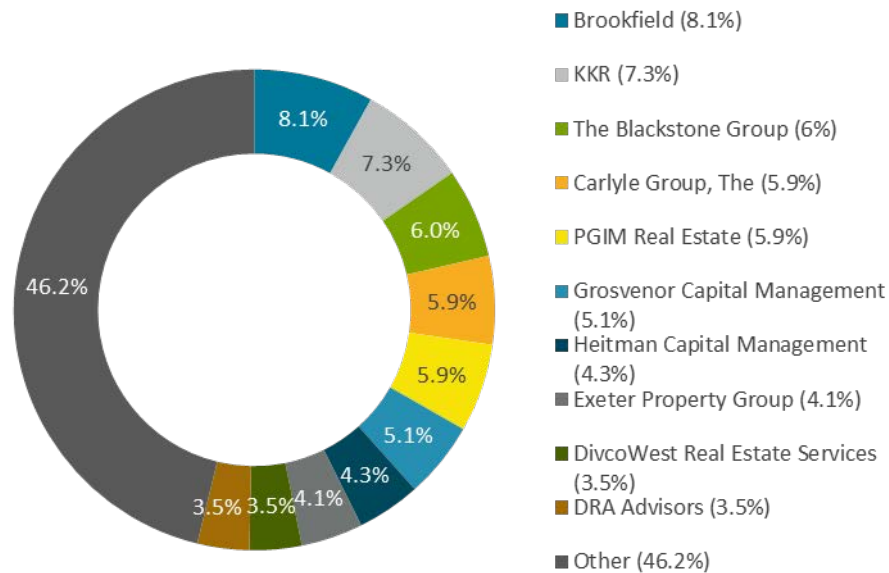
Top 10 – Manager Holdings

As of the first quarter of 2020, the Portfolio is well diversified by manager, with 43 active managers and US\$5.2 billion total exposure.

(in USD millions; Active investments only)

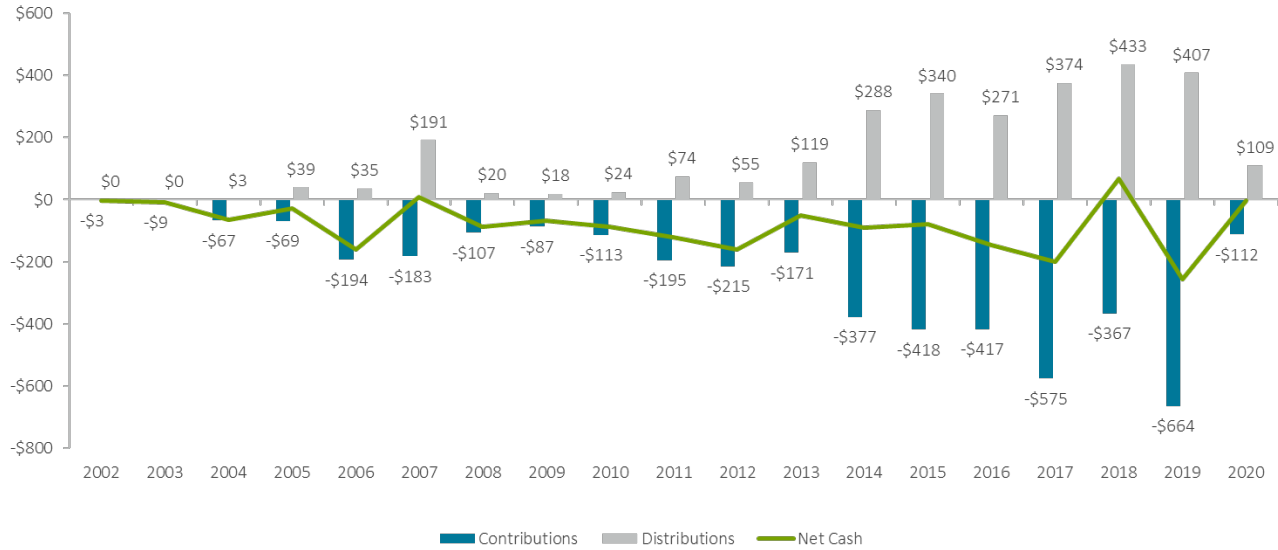
Manager	No. of		Contributions	Distributions	NAV	Exposure	Potential Exposure			
	Active Inv	Commitment					% of Portfolio	IRR	TVM	DPI
Brookfield	3	437.0	326.0	189.3	257.7	414.8	8.1%	12.5%	1.37x	0.58x
KKR	3	383.4	224.5	46.9	205.8	375.9	7.3%	8.4%	1.13x	0.21x
The Blackstone Group	5	420.0	170.0	225.3	41.1	310.8	6.0%	13.0%	1.57x	1.33x
Carlyle Group, The	4	324.0	335.4	245.5	199.1	306.0	5.9%	12.6%	1.33x	0.73x
PGIM Real Estate	4	263.2	164.3	70.3	186.7	305.6	5.9%	5.7%	1.56x	0.43x
Grosvenor Capital Management	1	264.0	0.0	0.0	0.0	264.0	5.1%	0.0%	N/A	N/A
Heitman Capital Management	2	160.0	145.7	38.7	168.4	221.4	4.3%	7.0%	1.42x	0.27x
Exeter Property Group	4	211.8	74.2	5.6	76.1	213.7	4.1%	6.7%	1.10x	0.08x
DivcoWest Real Estate Services	3	196.0	76.7	39.4	59.0	180.3	3.5%	15.3%	1.28x	0.51x
DRA Advisors	3	198.0	158.7	84.7	113.8	179.4	3.5%	11.5%	1.25x	0.53x
Total - Top 10 Managers	32	2,857.4	1,675.5	945.7	1,307.6	2,771.9	53.8%	9.4%	1.34x	0.56x

Exposure by Manager



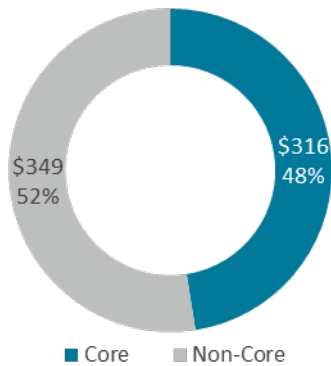
Portfolio Cash Flow Analysis

During 2020, the Portfolio contributed US\$112 million and received US\$109 million of distributions, for a net cash outflow of US\$2.4 million.

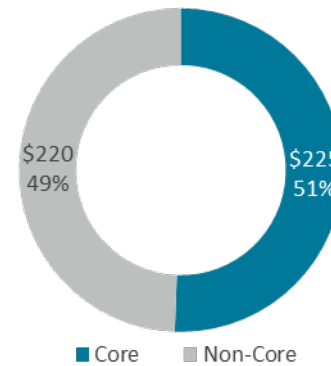


During the LTM period ended March 31, 2020, the Portfolio contributed US\$664 million and received US\$445 million of distributions, for a net cash outflow of US\$219 million.

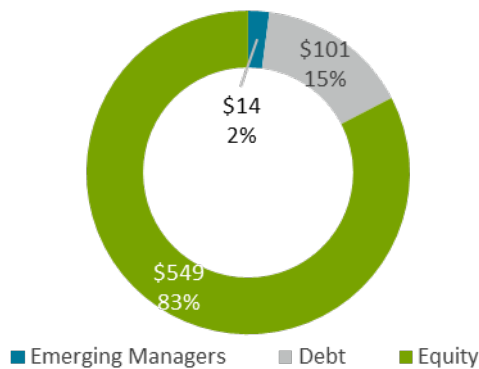
LTM Contributions by Core/Non-Core



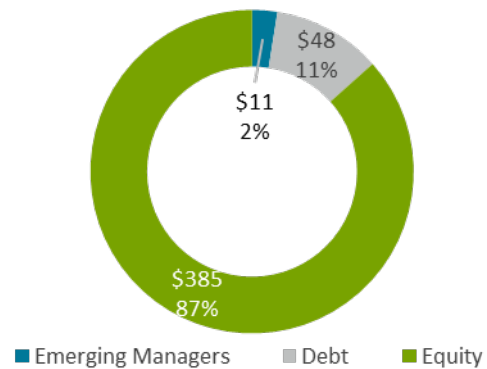
LTM Distributions by Core/Non-Core



LTM Contributions by Strategy

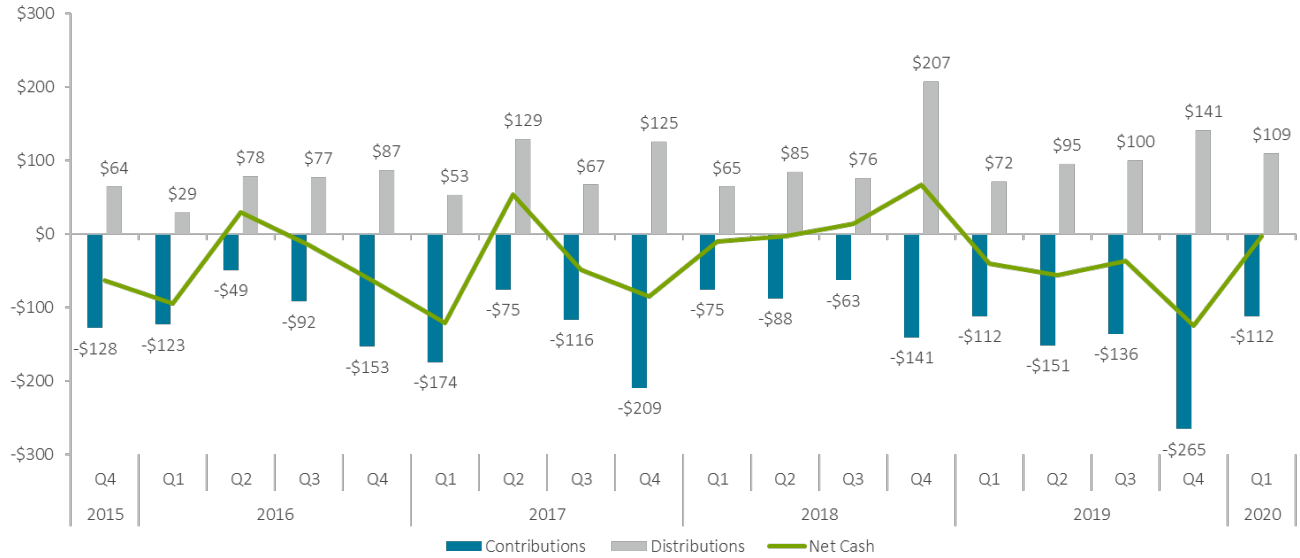


LTM Distributions by Strategy

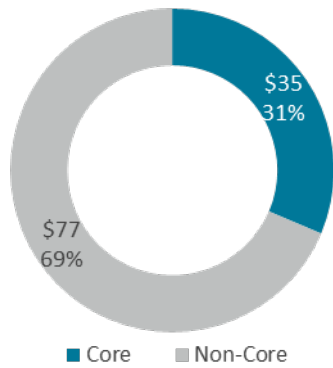


Quarterly Cash Flow Analysis

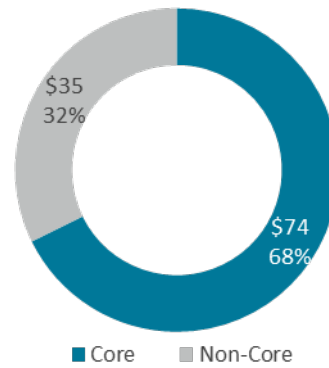
During the quarter, the Portfolio contributed US\$112 million and received US\$109 million of distributions, for a net cash outflow of US\$2.4 million.



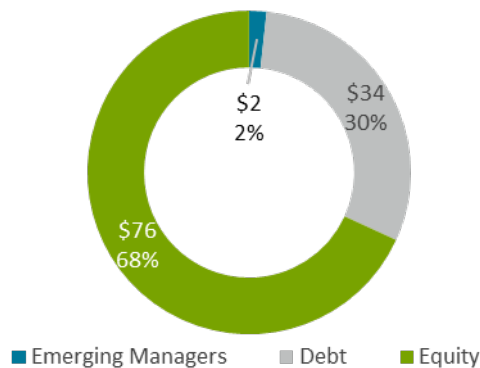
Quarterly Contributions by Core/Non-Core



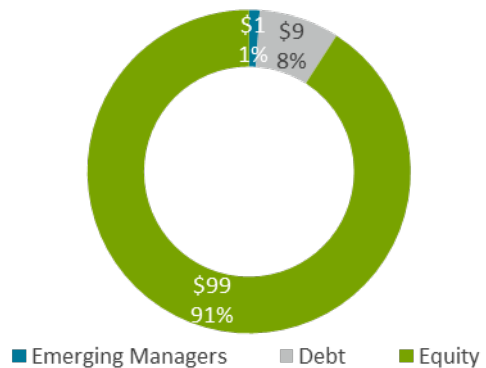
Quarterly Distributions by Core/Non-Core



Quarterly Contributions by Strategy

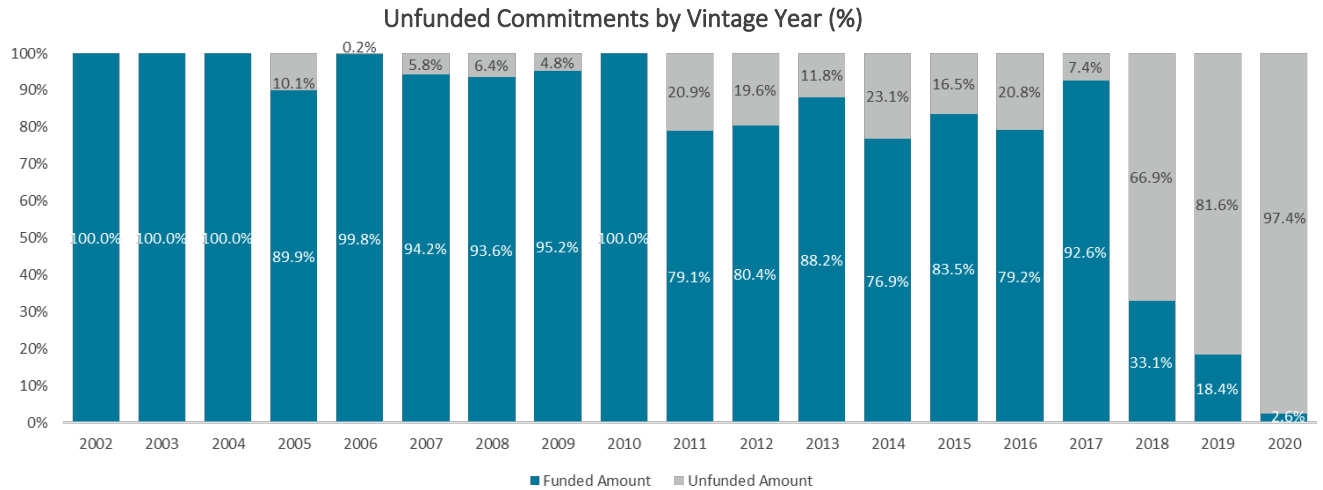


Quarterly Distributions by Strategy

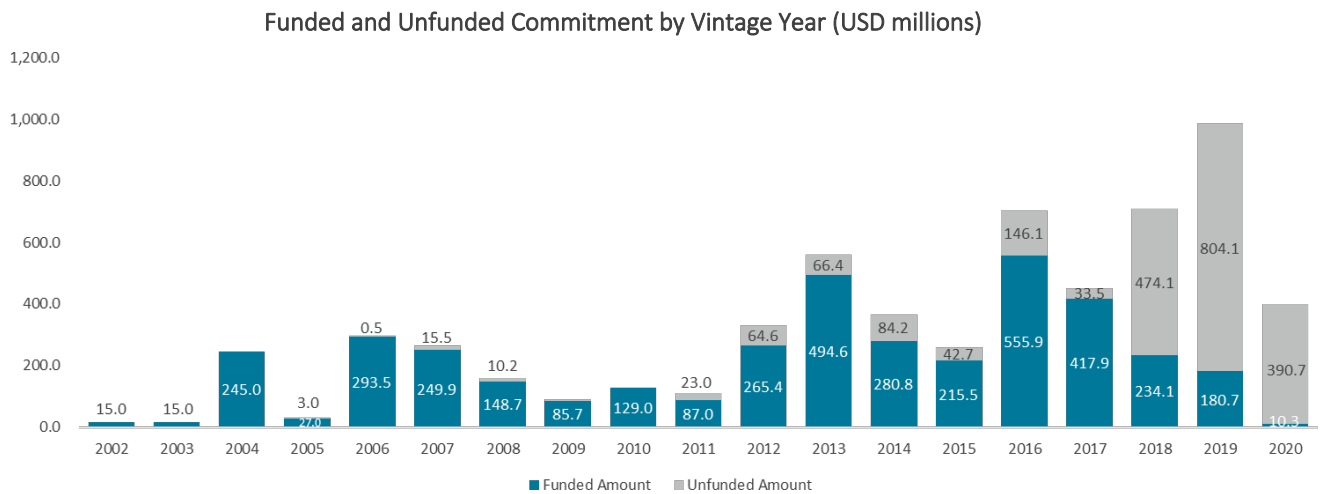


Vintage Year Analysis

The following chart illustrates cumulative capital contributions as a percentage of total capital commitments, by fund vintage year, as of March 31, 2020.



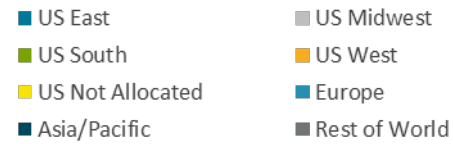
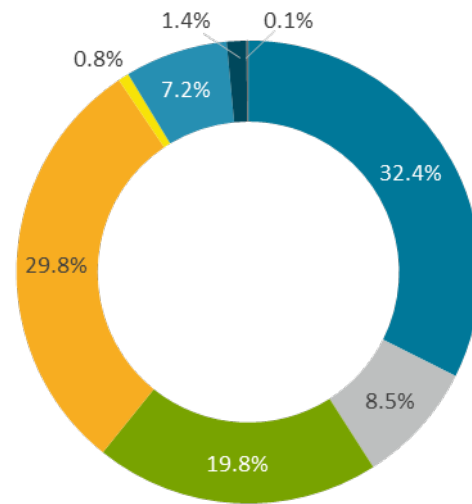
The following chart illustrates cumulative capital contributions relative to unfunded commitment, by fund vintage year, as of March 31, 2020.



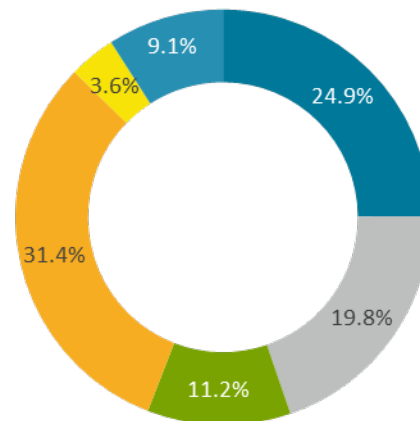
Portfolio Exposure Analysis

The following charts illustrates the Portfolio's exposure by Geography and Property Type as of March 31, 2020.

Geography	Exposure	
	NAV	NFI ODCE
New York State	14.1%	9.2%
US East (Non-NY)	18.3%	22.1%
US East	32.4%	31.3%
US Midwest	8.5%	8.4%
US South	19.8%	18.8%
US West	29.8%	41.5%
US Not Allocated	0.8%	0.0%
United States	91.3%	100.0%
Europe	7.2%	0.0%
Asia/Pacific	1.4%	0.0%
Rest of World	0.1%	0.0%



Property Type	Exposure	
	NAV	NFI ODCE
Office	24.9%	34.1%
Industrial	19.8%	18.9%
Retail	11.2%	16.0%
Residential	31.4%	26.5%
Hotel	3.6%	0.0%
Other	9.1%	4.4%



Portfolio Performance

(in USD millions; Active investments only)

Fund	Vintage Year	First Cash Flow	Commitment	Contributions	Distributions	NAV	Unfunded	Exposure	TVM	DPI	IRR
<i>Core Investments</i>											
Almanac Realty Securities VI	2012	6/6/2012	100.0	62.4	68.8	12.6	0.0	12.6	1.30x	1.10x	9.7%
Almanac Realty Securities VI (Sidecar III)	2012	8/10/2012	35.0	11.8	11.0	4.6	0.0	4.6	1.32x	0.93x	9.7%
Almanac Realty Securities VII	2015	4/24/2015	65.0	52.5	42.9	26.6	21.1	47.7	1.32x	0.82x	12.9%
Almanac Realty Securities VII (Sidecar III)	2015	12/9/2015	20.0	12.1	10.0	7.3	8.0	15.3	1.43x	0.83x	16.4%
Almanac Realty Securities VIII	2018	12/21/2018	51.0	6.3	0.4	4.6	45.0	49.6	0.79x	0.06x	-39.9%
Almanac Realty Securities VIII (Sidecar II)	2018	12/21/2018	34.0	4.0	0.1	3.6	30.1	33.6	0.94x	0.04x	-11.7%
Artemis Co-Investment	2016	9/30/2015	70.0	80.3	31.6	66.6	6.2	72.8	1.22x	0.39x	13.9%
Artemis Income and Growth Fund	2018	10/18/2019	101.0	19.9	0.0	18.2	81.1	99.3	0.92x	0.00x	NM
Brookfield Premier Real Estate Partners	2016	11/22/2016	119.0	135.0	16.0	164.2	0.0	164.2	1.33x	0.12x	10.7%
Carlyle Property Investors	2017	7/3/2017	119.0	131.4	12.4	140.3	0.0	140.3	1.16x	0.09x	6.9%
Exeter Core Industrial Club Fund II	2016	5/20/2016	37.0	35.6	5.6	37.0	1.4	38.5	1.20x	0.16x	9.8%
Exeter Core Industrial Fund III	2019	2/19/2020	84.8	9.8	0.0	8.3	75.0	83.3	0.85x	0.00x	NM
Harrison Street Core Property Fund	2019	10/4/2019	100.0	101.6	1.6	103.2	0.0	103.2	1.03x	0.02x	NM
Harrison Street Core Property Fund Co-Investment	2019	5/13/2019	50.0	32.0	0.4	32.8	18.4	51.3	1.04x	0.01x	NM
Heitman America Real Estate Trust, L.P.	2007	3/29/2007	48.0	81.9	33.9	104.5	0.0	104.5	1.69x	0.41x	7.0%
Heitman Core Real Estate Debt Income Trust	2018	11/7/2018	112.0	63.8	4.8	64.0	53.0	117.0	1.08x	0.08x	6.6%
Jamestown Premier Property Fund	2016	9/30/2015	65.0	68.9	27.6	54.5	6.5	61.0	1.19x	0.40x	7.3%
JP Morgan Special Situation Property Fund	2007	1/5/2007	15.0	24.7	14.0	22.3	0.0	22.3	1.47x	0.57x	4.8%
JP Morgan Strategic Property Fund	2006	12/5/2006	86.0	131.7	90.4	151.2	0.0	151.2	1.83x	0.69x	7.6%
LaSalle Property Fund	2010	7/1/2010	104.0	103.7	22.2	126.1	0.0	126.1	1.43x	0.21x	9.4%
Lion Industrial Trust	2017	1/3/2017	98.0	111.0	13.0	146.3	0.0	146.3	1.44x	0.12x	15.2%
MetLife Core Property Fund	2014	7/1/2014	80.0	80.0	19.5	102.7	0.0	102.7	1.53x	0.24x	9.1%
NYC Asset Investor #2	2013	7/9/2013	145.0	147.5	62.6	107.3	4.7	112.0	1.15x	0.42x	3.6%
PRISA	2006	9/28/2006	36.0	38.8	16.4	52.2	0.0	52.2	1.77x	0.42x	4.9%
PRISA II	2007	6/29/2007	63.4	67.6	24.7	98.2	0.0	98.2	1.82x	0.37x	5.8%
Prologis Targeted US Logistics Fund	2006	10/1/2006	10.0	13.8	5.2	21.1	0.0	21.1	1.90x	0.38x	6.3%
RREEF America REIT II	2006	10/2/2006	36.0	47.5	26.2	53.4	0.0	53.4	1.68x	0.55x	5.3%
UBS Trumbull Property Fund	2006	9/28/2006	106.0	164.2	170.7	80.1	0.0	80.1	1.53x	1.04x	6.3%
USAA Eagle Real Estate Fund	2015	12/1/2015	98.0	107.7	9.7	122.5	0.0	122.5	1.23x	0.09x	7.3%
Total: Core Investments			2,088.1	1,947.4	741.9	1,936.2	350.5	2,286.7	1.38x	0.38x	7.0%

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. IRR and TVPI for certain vehicles may have been impacted by Stepstone's or the underlying GPs' use of subscription-backed credit facilities by such vehicles. Reinvested/recycled amounts increase contributed capital.

(in USD millions; Active investments only)

Fund	Vintage	First	Commitment	Contributions	Distributions	NAV	Unfunded	Exposure	TVM	DPI	IRR
	Year	Cash Flow									
<i>Non-Core Investments</i>											
Aermont Capital Real Estate Fund IV	2018	4/18/2019	\$81.8	\$14.1	\$0.0	\$4.9	\$67.8	\$72.6	0.35x	0.00x	NM
American Value Partners Fund I	2008	10/18/2007	25.0	17.9	18.8	1.6	7.1	8.7	1.14x	1.05x	2.8%
Apollo Real Estate Investment Fund V	2005	6/15/2006	5.0	5.0	5.7	0.1	0.5	0.6	1.16x	1.14x	1.9%
Avanath Affordable Housing II	2013	7/14/2015	10.0	10.2	3.2	13.2	0.3	13.5	1.60x	0.31x	11.8%
Basis Investment Group Real Estate Fund I	2017	11/16/2017	19.4	13.4	4.7	10.5	8.9	19.4	1.13x	0.35x	11.4%
Blackstone Real Estate Partners Europe III - USD	2008	10/24/2008	50.0	42.8	71.2	2.2	10.2	12.4	1.72x	1.66x	16.1%
Blackstone Real Estate Partners Europe VI L.P.	2019	11/20/2019	111.0	7.5	0.0	6.8	103.5	110.3	0.90x	0.00x	NM
Blackstone Real Estate Partners IV L.P.	2003	5/14/2004	25.0	32.0	44.4	0.7	0.0	0.7	1.41x	1.39x	10.1%
Blackstone Real Estate Partners IX L.P.	2019	9/23/2019	184.0	33.1	1.2	30.8	152.1	182.9	0.96x	0.04x	NM
Blackstone Real Estate Partners VI L.P.	2007	7/28/2006	50.0	54.6	108.6	0.6	3.9	4.5	2.00x	1.99x	13.4%
Brookfield Strategic Real Estate Partners	2012	9/20/2012	125.0	131.2	165.1	42.2	23.9	66.0	1.58x	1.26x	14.3%
Brookfield Strategic Real Estate Partners III, L.P.	2018	4/12/2019	193.0	59.8	8.2	51.3	133.2	184.5	1.00x	0.14x	NM
Canyon-Johnson Urban II	2005	5/11/2005	30.0	27.0	11.9	0.1	3.0	3.1	0.45x	0.44x	-10.4%
Capri Urban Investors	2007	6/3/2008	40.0	40.0	18.4	9.4	0.0	9.4	0.69x	0.46x	-4.9%
Carlyle Realty Partners V, L.P.	2006	8/27/2007	15.0	19.0	25.1	2.5	3.5	6.0	1.45x	1.32x	8.7%
Carlyle Realty Partners VI, L.P.	2011	9/28/2011	70.0	75.7	107.9	6.1	23.0	29.1	1.51x	1.43x	20.4%
Carlyle Realty Partners VII, L.P.	2014	7/1/2014	120.0	109.2	100.0	50.3	80.4	130.7	1.38x	0.92x	13.5%
DivcoWest Fund IV	2013	1/15/2014	25.0	24.8	37.8	3.4	2.2	5.6	1.67x	1.53x	25.5%
DivcoWest Fund V	2016	12/21/2016	78.0	51.9	1.5	56.1	26.1	82.2	1.11x	0.03x	5.8%
DivcoWest Fund VI	2019	N/A	93.0	0.0	0.0	-0.5	93.0	92.5	-	-	-
DRA Growth and Income Fund IX	2016	3/9/2017	56.0	56.6	15.9	50.5	7.4	57.9	1.17x	0.28x	12.9%
DRA Growth and Income Fund VIII	2014	9/29/2014	75.0	91.7	68.8	52.4	1.6	53.9	1.32x	0.75x	11.0%
DRA Growth and Income Fund X	2019	3/25/2020	67.0	10.3	0.0	10.9	56.7	67.6	1.06x	0.00x	NM

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(in USD millions; Active investments only)

Fund	Vintage	First	Commitment	Contributions	Distributions	NAV	Unfunded	Exposure	TVM	DPI	IRR
	Year	Cash Flow									
<i>Non-Core Investments (continued)</i>											
Exeter Industrial Value Fund IV, L.P.	2017	6/30/2017	34.0	28.9	0.0	30.8	5.1	35.9	1.07x	0.00x	4.6%
Exeter Industrial Value Fund V, L.P.	2019	N/A	56.0	0.0	0.0	0.0	56.0	56.0	-	-	-
GreenOak Asia III	2019	N/A	99.0	0.0	0.0	-0.7	99.0	98.3	-	-	-
Grosvenor Real Estate Emerging Manager SMA	2019	N/A	264.0	0.0	0.0	0.0	264.0	264.0	-	-	-
H2 Special Opportunities Fund II	2012	2/14/2011	40.0	40.0	58.3	1.0	0.0	1.0	1.48x	1.46x	13.4%
H2 Special Opportunities III	2014	12/29/2014	65.0	65.0	57.4	17.4	0.0	17.4	1.15x	0.88x	5.7%
H2 Special Opportunities IV	2016	11/15/2016	119.0	77.4	1.0	45.1	42.6	87.7	0.60x	0.01x	-63.0%
KKR Real Estate Partners Americas II	2017	2/9/2018	135.4	82.3	24.1	75.0	64.0	139.0	1.20x	0.29x	20.3%
KKR Real Estate Partners Europe II	2019	N/A	89.0	0.0	0.0	0.0	89.0	89.0	-	-	-
Lone Star Real Estate Fund III, L.P.	2013	2/28/2014	190.0	181.7	224.4	18.5	11.9	30.4	1.34x	1.23x	14.1%
Metropolitan Workforce Housing Fund	2007	7/12/2007	10.5	10.5	12.6	0.2	0.0	0.2	1.21x	1.19x	3.9%
NYC Asset Investor #1	2013	6/25/2013	60.0	68.5	33.0	48.0	17.1	65.1	1.18x	0.48x	4.2%
NYC Asset Investor #3	2013	9/20/2013	96.0	63.3	11.1	76.2	32.7	109.0	1.38x	0.18x	9.3%
NYCRS-KKR CMBS Retention Partners	2017	6/30/2017	159.0	142.1	22.8	130.8	17.2	147.9	1.08x	0.16x	4.6%
Pramerica Real Estate Capital VI	2016	4/20/2017	67.8	57.9	29.1	36.4	22.9	59.2	1.13x	0.50x	12.2%
Pramerica Real Estate Capital VII	2019	N/A	96.0	0.0	0.0	0.0	96.0	96.0	-	-	-
PW Real Estate Fund III	2015	10/7/2016	65.2	44.0	18.2	55.8	21.3	77.1	1.68x	0.41x	27.5%
Silverpeak Legacy Partners III	2008	6/4/2008	30.0	12.3	4.1	1.3	0.0	1.3	0.44x	0.33x	-12.2%
Stockbridge Real Estate III	2009	9/9/2008	22.5	22.5	14.0	12.3	0.0	12.3	1.17x	0.62x	2.2%
Taconic New York City Investment Fund	2011	7/5/2012	70.0	29.3	47.5	4.8	40.7	45.5	1.79x	1.62x	15.9%
The City Investment Fund I	2004	3/16/2004	120.0	118.3	119.7	0.2	0.0	0.2	1.01x	1.01x	0.3%
Thor Urban Property Fund II	2008	10/30/2008	12.5	17.1	17.1	3.2	0.9	4.2	1.19x	1.00x	5.1%
Tristan European Property Investors Special Opp IV	2015	9/30/2015	65.2	54.6	7.0	55.7	13.4	69.0	1.15x	0.13x	6.7%
Westbrook Real Estate Fund VIII, L.P.	2010	12/28/2009	50.0	59.7	69.0	8.0	4.3	12.3	1.29x	1.16x	10.5%
Westbrook Real Estate Fund X	2015	7/18/2016	47.0	40.5	20.5	26.1	14.2	40.3	1.15x	0.51x	11.0%
Westbrook Real Estate Fund XI	2018	N/A	92.0	0.0	0.0	-0.1	92.0	91.9	-	-	-
Total: Non-Core Investments			3,703.4	2,143.9	1,609.3	1,051.9	1,812.5	2,864.4	1.24x	0.75x	7.7%
Total: All Investments			5,791.5	4,091.4	2,351.2	2,988.1	2,163.0	5,151.1	1.31x	0.57x	7.3%

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. IRR and TVPI for certain vehicles may have been impacted by Stepstone's or the underlying GPs' use of subscription-backed credit facilities by such vehicles. Reinvested/recycled amounts increase contributed capital.

Infrastructure Quarterly Report (Public):



Infrastructure Monitoring Report

For the period ended March 31, 2020

Report Prepared For:

Teachers' Retirement System of the City of New York



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Important Information

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All data is as of March 31, 2020 unless otherwise noted.

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

I. Executive Summary

The Teachers' Retirement System of the City of New York ("NYC TRS") 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 NYC TRS 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 NYC TRS 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 March 31, 2020, the Program has committed US\$1,621.7 million to 21 partnership investments (the "Portfolio"). This quarterly monitoring report covers the performance of the Portfolio as of March 31, 2020 as well as significant activity that occurred during the first quarter of 2020.

Allocation Summary

NYC TRS has an Infrastructure allocation target of 2% of total pension assets. As of March 31, 2020, the market value of NYC TRS Infrastructure Program represented approximately 1.4% of total pension assets, a 18-basis point increase from the prior quarter.

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

<i>US\$ in millions*</i>	March 31, 2020	December 31, 2019	March 31, 2019	Quarterly Change	Yearly Change
Total Pension Assets*	\$73,653.0	\$82,163.0	\$74,806.0	(\$8,510.0)	(\$1,153.0)
Total Infrastructure Assets	\$1,040.1	\$1,015.7	\$868.4	\$24.4	\$171.7
% Allocation to Infrastructure (Target of 2%)	1.4%	1.2%	1.2%	+18 bps	+25 bps

*NYC TRS total Pension 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.

Performance Summary

As of March 31, 2020, the Infrastructure Program has achieved a Total Value to Paid-In multiple of 1.2x invested capital and an IRR of 10.3%. Note that, given the relative immaturity of the Portfolio and underlying fund investments, the current performance to-date is not meaningful.

US\$ in millions*	March 31, 2020	December 31, 2019	March 31, 2019	Quarterly Change	Yearly Change
Number of Managers	10	10	10	0	0
Number of Investments	21	21	18	0	3
Committed Capital ¹	\$1,621.7	\$1,623.1	\$1,508.1	(\$1.4)	\$113.7
Contributed Capital	\$1,075.4	\$990.6	\$851.7	\$84.8	\$223.8
Distributed Capital	\$291.8	\$264.3	\$193.6	\$27.4	\$98.1
Market Value	\$1,040.1	\$1,015.7	\$868.4	\$24.4	\$171.7
Total Value	\$1,331.9	\$1,280.1	\$1,062.1	\$51.8	\$269.8
Total Gain/(Loss)	\$256.5	\$289.4	\$210.4	(\$33.0)	\$46.0
Unfunded Commitment	\$655.8	\$733.1	\$746.1	(\$77.4)	(\$90.4)
Exposure ²	\$1,695.9	\$1,748.9	\$1,614.6	(\$53.0)	\$81.3
DPI ³	0.3x	0.3x	0.2x	0.0x	0.0x
TVPI ⁴	1.2x	1.3x	1.2x	-0.1x	0.0x
IRR ⁵	10.3%	12.5%	12.7%	-2.1%	-2.4%
TVPI Net of StepStone Fees ⁶	1.2x	1.3x	1.3x	-0.1x	0.0x
IRR Net of StepStone Fees ⁶	10.3%	12.4%	12.6%	-2.1%	-2.4%

* 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.**

¹ 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.

² Exposure represents the sum of Market Value and Unfunded Commitment.

³ 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.

⁴ 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.

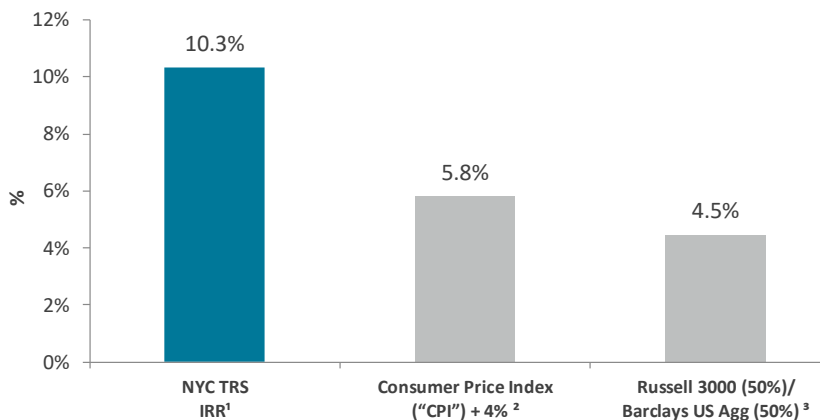
⁵ IRR, or Internal Rate of Return, is a performance metric that is calculated based on the Portfolio's daily cash flows and market value as of quarter-end. IRR is net of fund managers' fees, expenses and carried interest.

⁶ TVPI and IRR Net of StepStone fees represent TVPI and IRR net of fees paid by NYC TRS to StepStone through the quarter-end date. IRR and TVPI for certain vehicles may have been impacted by StepStone's or the underlying GPs' use of subscription-backed credit facilities by such vehicles. Reinvested/recycled amounts increase contributed capital.

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 NYC TRS’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 March 31, 2020.



¹NYC TRS 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.**

²Consumer 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.

³ 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 March 31, 2020. (US\$ in millions)	Market Value		Unfunded Commitment		Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
By Strategy:						
Core	914.3	87.9%	616.6	94.0%	1,531.0	90.3%
Non-Core	125.8	12.1%	39.2	6.0%	165.0	9.7%
Total	1,040.1	100.0%	655.8	100.0%	1,695.9	100.0%
By Geographic Focus:						
Global	320.7	30.8%	128.4	19.6%	449.1	26.5%
North America	91.0	8.8%	65.1	9.9%	156.1	9.2%
OECD	628.4	60.4%	462.3	70.5%	1,090.7	64.3%
Total	1,040.1	100.0%	655.8	100.0%	1,695.9	100.0%
By Industry Focus:						
Communication	8.1	0.8%	-	0.0%	8.1	0.5%
Diversified	882.7	84.9%	493.9	75.3%	1,376.6	81.2%
Energy	139.0	13.4%	161.9	24.7%	300.9	17.7%
Transportation	10.3	1.0%	-	0.0%	10.3	0.6%
Total	1,040.1	100.0%	655.8	100.0%	1,695.9	100.0%

II. Infrastructure Market Overview

Market Update

North America

During the first quarter of 2020, the North American market faced increasing volatility, as the COVID-19 outbreak and oil price volatilities cast uncertainty on the outlook of the market and economy. The US equity market experienced significant declines, and North American Central Banks have implemented monetary and fiscal stimulus policies, including rate cuts and emergency funding programs.

Against this economic backdrop, M&A activity is experiencing varying levels of delays due to the market uncertainties and physical constraints on conducting asset due diligence. However, the telecom sector has benefited from the government-mandated work-from-home policies across regions, as internet traffic has surged. One telecom deal, the US\$14.3 billion take-private of Zayo by EQT Infrastructure and Digital Colony Partners, closed in early March, representing the majority of the US\$16.4 billion of telecom deals completed during the quarter.

In the energy and utility sectors, several transactions reached financial close during the quarter that were announced prior to recent market disruption. These included the development of the US\$3.6 billion Canada Kuwait Petrochemical Corp., a 50/50 joint venture between Pembina Pipeline Corp. and Petrochemical Industries Co. of Kuwait, WPX Energy's US\$2.5 billion acquisition of Felix Energy, an exploration & processing company founded by EnCap, and the completion of SteelRiver Infrastructure Partners' US\$4.3 billion agreed sale of People's Gas to Aqua America, creating one of the largest publicly-traded US water and gas firms.

The renewables sector also remained active in the quarter, with several announced transactions reaching financial close, such as CPPIB's US\$3.3 billion take-private of the Yieldco of renewable developer Pattern Development, and the reaching of the definitive merger agreement stage for Brookfield Renewable Partners' US\$1.4 billion acquisition of the remaining 38% of outstanding shares of TerraForm Power it doesn't already own.

The COVID-19 outbreak has muted the transportation sector due to significant revenue and volume declines in light of the travel bans imposed by governments across the globe. One major logistics-related asset that was transacted during the quarter was TRAC Intermodal, which owns and operates marine chassis worldwide and was sold to Stonepeak Infrastructure Partners for US\$900 million.

UK & Europe

M&A activity in the European telecom sector was robust during the first quarter of 2020. Cellnex agreed to buy Portuguese telecoms towers operator OMTEL from Altice, Morgan Stanley and Horizon Equity Partners for ~14.0x EBITDA, implying an enterprise value of ~€800 million. In addition, Cellnex and Bouygues Telecom have reached a strategic agreement through which they will deploy a national fibre optic network in France. Also in the fibre sub-sector, EQT has partnered with OMERS to acquire Deutsche Glasfaser in a deal valuing the German fibre company at ~€2.8 billion. Finally, Telecom Italia has selected KKR to be an exclusive partner to develop its ultra-broadband business in Italy.

In the energy sector, Pennon Group has agreed to sell UK waste management and energy company Viridor to KKR for an enterprise value of ~£4.2 billion or ~18.5x EBITDA. Also in the UK, an Asterion-led consortium that includes EDF Invest and Swiss Life, has agreed to buy utility metering and connections company Energy Assets Group from Alinda and Hermes. In the energy sector, F2i and Asterion have agreed to buy Italian energy group Sorgenia from a group of banks for ~€1 billion, or

~5.5x EBITDA. In addition, Macquarie has signed an agreement with joint investor Wren House to acquire its 40% stake in Spanish electricity company Viesgo. Finally, Naturgy has agreed to sell a ~25% stake in Medgaz, a natural gas pipeline between Spain and Algeria, to BlackRock.

In the renewables sector, Macquarie-backed Bruc Iberia Energy Investment Partners has acquired two 50 MW, under-construction Spanish PV plants from developer Solarpack. In Sweden, BlackRock has sold a 46 MW operational wind farm to Equitix. Also in Sweden, Brookfield-backed CEE Group has made its first investment in the country with the all-equity acquisition of a 53 MW onshore wind farm from European Energy.

In the transportation sector, activity suffered a halt due to the COVID-19 situation and no major transactions were announced during the quarter in Europe.

Australia

The number of transactions that occurred across various sectors in Australia was notably lower during the quarter, likely attributed to the COVID-19 outbreak generating economic uncertainty and an associated decrease in investor confidence. Certain GP's also decided to withdraw from confirmed transactions such as EQT Infrastructure's cancellation of its NZ\$1.5 billion acquisition of New Zealand aged care business Metlifecare, triggering a "material adverse change" clause under the terms of the scheme implementation agreement.

In telecommunications, a consortium led by Macquarie Infrastructure and Real Assets ("MIRA") reached financial close on the purchase of an 88% share in hyperscale data centre business AirTrunk, with the transaction valuing the business at more than A\$3 billion and a ~33x EBITDA multiple. Further, Pacific Equity Partners signed an agreement to acquire Zenith Energy Pty Ltd ("Zenith"), a listed energy provider for remote mine sites across Australia. The transaction values Zenith at an enterprise value of A\$260 million and a multiple of 8.4x EBITDA. In social infrastructure, AMP Capital agreed to raise its stake in Auckland South Corrections Facility to 70% (from an initial 40%), purchasing an additional 30% from UK infrastructure investor John Laing as a result of a bilateral negotiation process.

Outside of transactions, the APA Group, Marubeni and Osaka Gas closed a A\$693 million refinance of their Energy Infrastructure Investments ("EII") business comprising three tranches with tenors of five years each. EII holds 10 electricity and gas assets including the Murraylink and Directlink electricity interconnectors, the Wickham Point Pipeline as well as various remote gas power stations and processing facilities. The loan margin has not been disclosed, however lenders agreed to keep pricing as set before current market dislocation.

III. Portfolio Review

Quarterly Highlights

- **New Investment Commitments** – During the first quarter of 2020, the Program did not close on any new investments.
- **Subsequent Investment Commitments** – Subsequent to quarter-end, the Program closed on one new investment commitment totaling US\$20.9 million. This is shown on the table below.

US\$ in millions

Investment	Month and Year Closed	Vintage Year	Strategy	Geographic Focus	Industry Focus	Committed Capital
EQT Infrastructure IV Co-Investment (G) SCSp (Lightspeed)	May 2020	2020	Infrastructure	OECD	Telecommunications	\$20.9
Total						\$20.9

- **Cash Outflow Increased** – During the first quarter of 2020, the Program made US\$84.8 million of contributions and received US\$27.4 million of distributions, for a net cash outflow of US\$57.4 million. This compared to a net cash outflow of US\$14.6 million during the prior quarter.
- **Valuation Decreased** – During the first quarter of 2020, net of cash flow activity, the valuation of the Portfolio decreased by approximately US\$33.0 million, or 3.1%, from the prior quarter. The valuation decrease primarily reflects the decrease in value of underlying investments in Global Energy & Power Infrastructure Fund III, L.P.
- **New Underlying Fund Investments** – During the first quarter of 2020, five 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
Kellas Midstream Limited	Global Energy & Power Infrastructure Fund III, L.P.	Jan-20	Private	Midstream	United Kingdom	7.2	6.8	1.0x
Axiom Wind II L.P.	Axiom Infrastructure Canada II (Intl) Limited Partnership	Jan-20	Private	Renewables	Canada	4.8	5.6	1.2x
Toehold and Other Investments (Brookfield Infra IV)	Brookfield Infrastructure Fund IV, L.P.	Feb-20	Private	Other	United States	1.7	1.6	1.0x
MRP West Power Holdings II, LLC	NYCRS EIG Energy Partners, L.P.	Jan-20	Private	Conventional Power	United States	0.9	0.9	1.0x
MRP CalPeak Holdings, LLC	NYCRS EIG Energy Partners, L.P.	Jan-20	Private	Conventional Power	United States	0.9	0.9	1.0x

- **Company Exits** – During the first quarter of 2020, no investment positions exited the Portfolio.

Performance by Vintage Year

The following table illustrates the Portfolio's since-inception investment performance by vintage year as of March 31, 2020. Note that the performance of funds that are less than two years old is not meaningful.

As of March 31, 2020 (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	\$140.0	\$113.8	\$47.5	\$132.2	\$179.7	\$65.9	\$34.9	\$167.1	0.4x	1.6x	11.8%
2014	330.0	390.3	178.6	370.3	548.9	158.7	3.5	373.8	0.5x	1.4x	12.8%
2016	330.6	228.0	37.6	211.8	249.4	21.3	121.0	332.8	0.2x	1.1x	4.9%
2017	259.2	178.3	22.8	176.7	199.4	21.1	95.2	271.9	0.1x	1.1x	9.0%
2018	175.2	53.4	2.5	47.3	49.8	-	122.4	169.7	NM	NM	NM
2019	386.8	111.6	2.8	101.9	104.7	-	278.7	380.6	NM	NM	NM
Total	\$1,621.7	\$1,075.4	\$291.8	\$1,040.1	\$1,331.9	\$256.5	\$655.8	\$1,695.9	0.3x	1.2x	10.3%

Performance by Strategy and Industry Focus

The following table illustrates the Portfolio's since-inception investment performance by strategy and industry focus as of March 31, 2020.

As of March 31, 2020 (US\$ in millions)

Strategy/Industry	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Total Value	Total Gain/(Loss)	Unfunded Commitment	Exposure	DPI	TVPI	IRR
Core	\$1,477.6	\$954.5	\$275.0	\$914.3	\$1,189.4	\$234.9	\$616.6	\$1,531.0	0.3x	1.3x	10.2%
Diversified	1,221.7	818.7	202.4	816.9	1,019.3	200.6	486.1	1,303.0	0.2x	1.3x	9.4%
Energy	245.9	125.8	72.6	87.2	159.8	33.9	130.5	217.7	0.6x	1.3x	21.8%
Transportation	10.0	10.0	-	10.3	10.3	0.3	-	10.3	NM	1.0x	9.8%
Non-Core	144.1	121.0	16.7	125.8	142.5	21.6	39.2	165.0	0.1x	1.2x	12.1%
Communication	\$8.1	\$8.2	\$0.0	\$8.1	\$8.1	-	\$0.0	\$8.1	NM	NM	NM
Diversified	63.4	64.7	9.9	65.8	75.7	11.0	7.8	73.6	0.2x	1.1x	11.3%
Energy	72.6	48.1	6.9	51.9	58.8	10.6	31.4	83.2	0.1x	1.2x	13.2%
Total	\$1,621.7	\$1,075.4	\$291.8	\$1,040.1	\$1,331.9	\$256.5	\$655.8	\$1,695.9	0.3x	1.2x	10.3%

Performance by Geographic Focus

The following table and charts illustrate the Portfolio's since-inception investment performance by geographic focus as of March 31, 2020.

As of March 31, 2020 (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	\$405.0	\$302.5	\$79.5	\$320.7	\$400.2	\$97.7	\$128.4	\$449.1	0.3x	1.3x	11.4%
North America	155.9	94.4	11.0	91.0	102.1	7.7	65.1	156.1	0.1x	1.1x	6.2%
OECD	1,060.8	678.6	201.2	628.4	829.6	151.0	462.3	1,090.7	0.3x	1.2x	10.0%
Total	\$1,621.7	\$1,075.4	\$291.8	\$1,040.1	\$1,331.9	\$256.5	\$655.8	\$1,695.9	0.3x	1.2x	10.3%

*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:

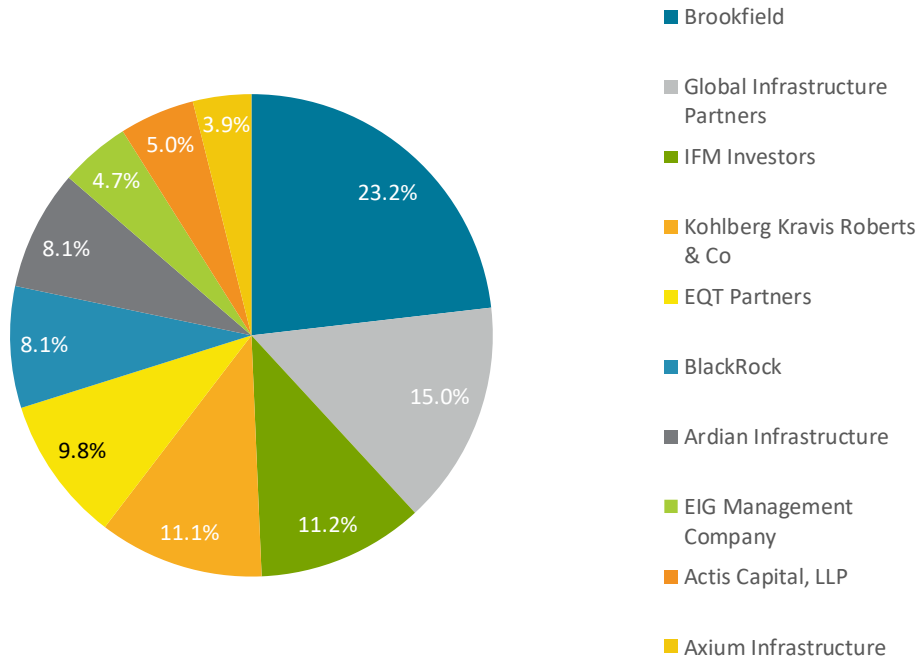
- Core Infrastructure Investments: 60% to 100%; and
- Non-Core Infrastructure Investments: 0% to 40%.

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.

	Market Value		Unfunded Commitment		Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
<i>As of March 31, 2020. (US\$ In millions)</i>						
By Strategy:						
Core	914.3	87.9%	616.6	94.0%	1,531.0	90.3%
Non-Core	125.8	12.1%	39.2	6.0%	165.0	9.7%
Total	1,040.1	100.0%	655.8	100.0%	1,695.9	100.0%
By Geographic Focus:						
Global	320.7	30.8%	128.4	19.6%	449.1	26.5%
North America	91.0	8.8%	65.1	9.9%	156.1	9.2%
OECD	628.4	60.4%	462.3	70.5%	1,090.7	64.3%
Total	1,040.1	100.0%	655.8	100.0%	1,695.9	100.0%
By Industry Focus:						
Communication	8.1	0.8%	-	0.0%	8.1	0.5%
Diversified	882.7	84.9%	493.9	75.3%	1,376.6	81.2%
Energy	139.0	13.4%	161.9	24.7%	300.9	17.7%
Transportation	10.3	1.0%	-	0.0%	10.3	0.6%
Total	1,040.1	100.0%	655.8	100.0%	1,695.9	100.0%

By Investment Manager

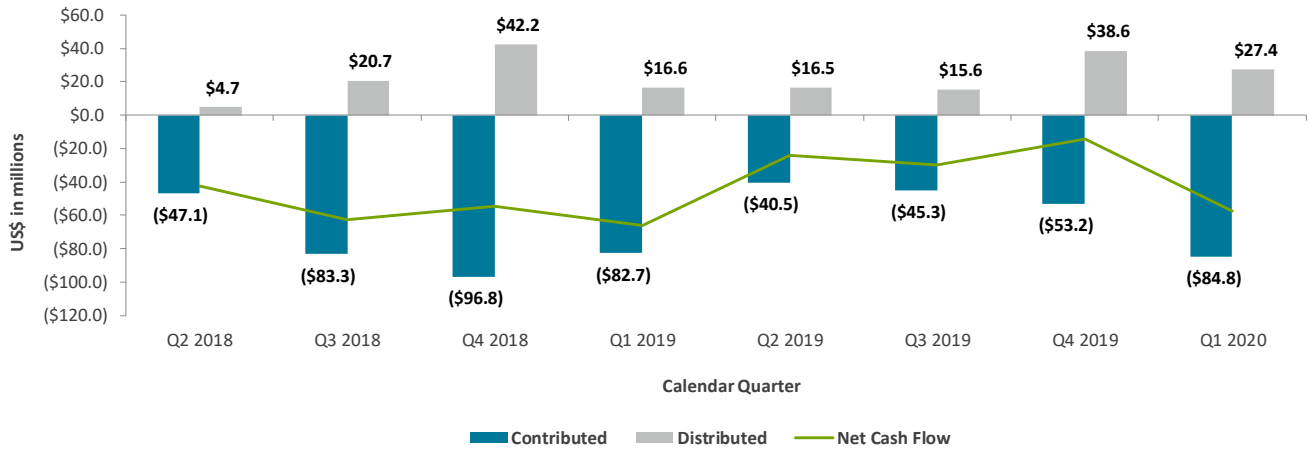
As of March 31, 2020, the Program had made 21 investment commitments to ten managers. NYC TRS seeks to limit its exposure to any single manager to no more than 20% of the total Real Assets Program when fully invested. As the Program matures and closes on additional commitments, the single manager exposure is expected to decline significantly. Below is the Portfolio's current exposure by manager.



Portfolio Cash Flow Analysis

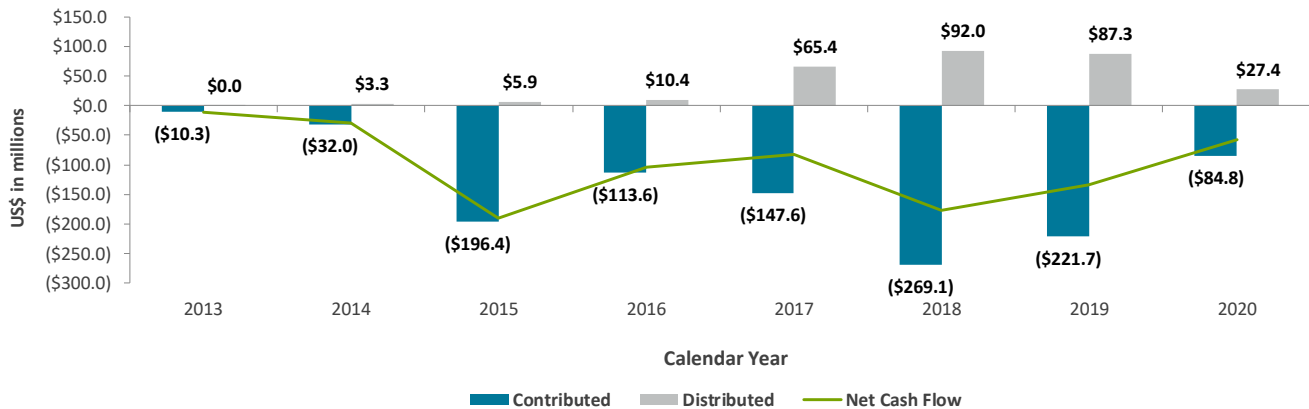
Quarterly Cash Flow Activity

During the first quarter of 2020, the Program made US\$84.8 million of contributions and received US\$27.4 million of distributions, for a net cash outflow of US\$57.4 million. As of March 31, 2020, 19 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.



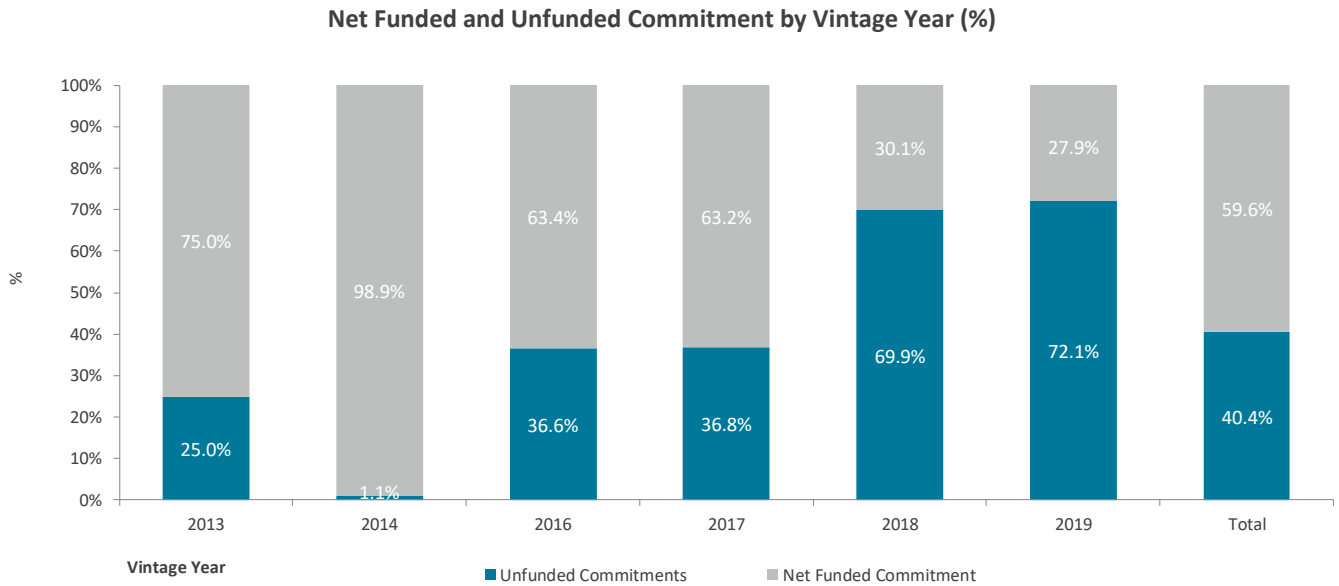
Annual Cash Flow Activity

During the first quarter of 2020, the Program made US\$84.8 million of contributions and received US\$27.4 million of distributions, for a net cash outflow of US\$57.4 million. The graph below illustrates cash flow activity since inception by calendar year.

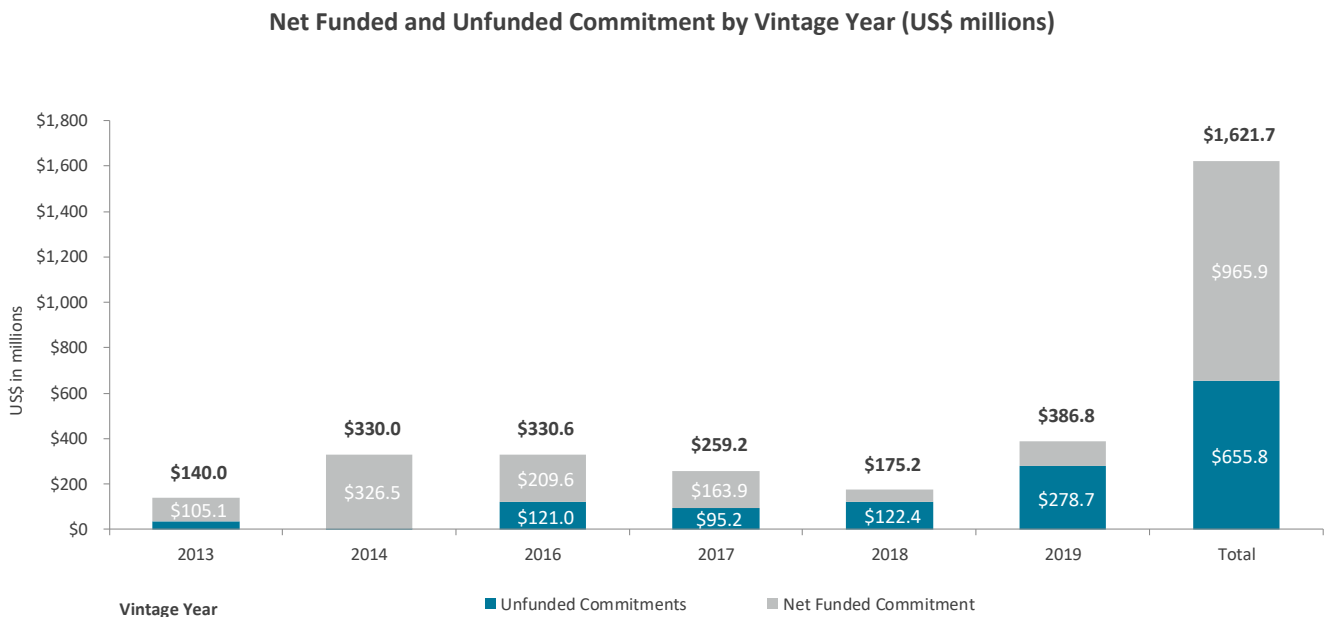


Net Funded and Unfunded Commitments by Vintage Year

The following chart illustrates the Portfolio’s net funded commitments (defined as total contributions inside commitment less any returns of excess capital and callable distributions) as a percentage of total capital commitments, by fund vintage year, as of March 31, 2020. Overall, the Portfolio was 40.4% 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 March 31, 2020. Overall, the Portfolio had US\$655.8 million of unfunded commitments as of quarter-end.

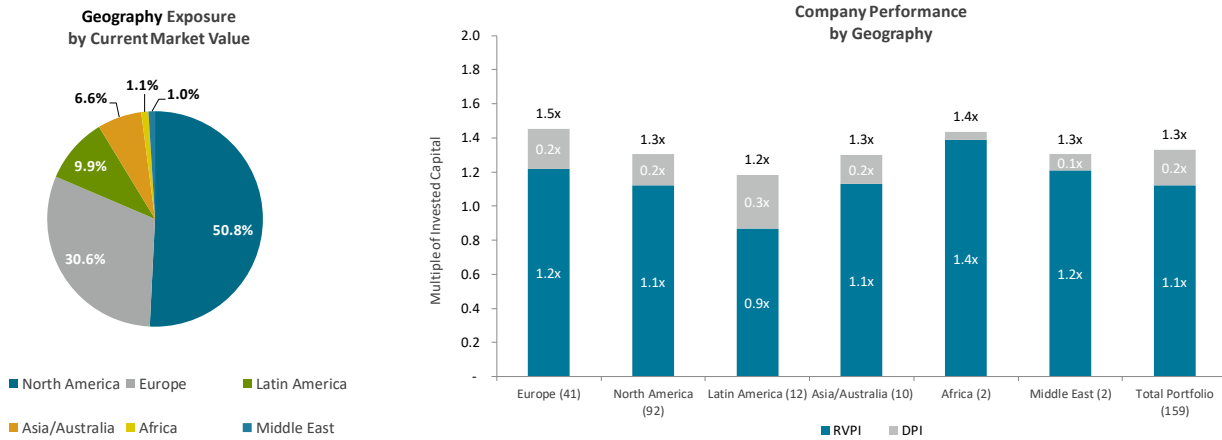


Portfolio Company-Level Analysis

Unusable As of quarter-end, the Portfolio had exposure to 159 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.

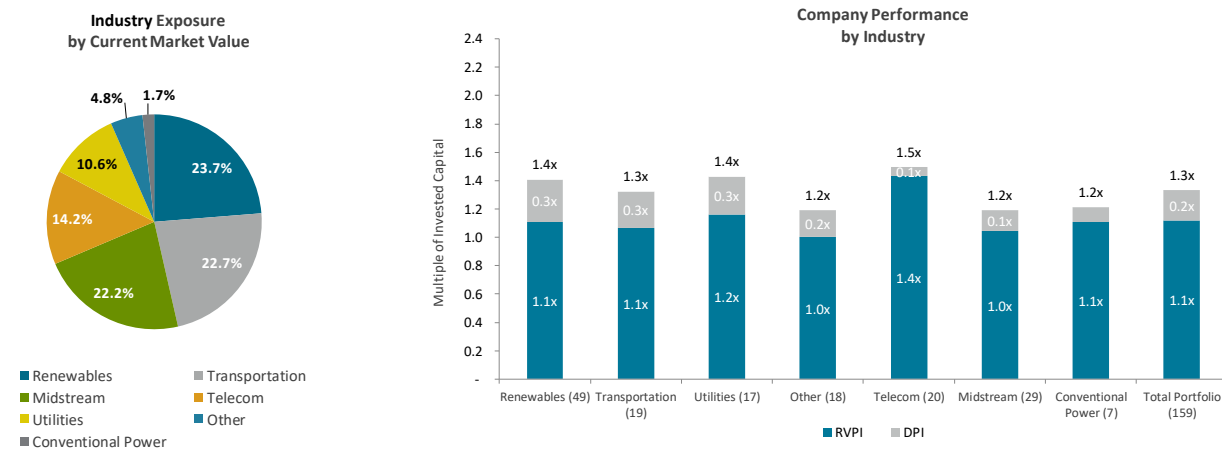
Geographic Exposure and Performance

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.

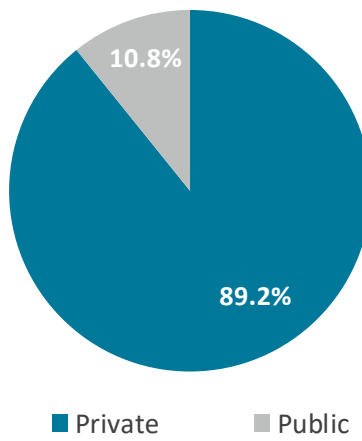


*Multiples may not add to total multiple due to rounding.

Public Market Exposure

As of quarter-end, publicly traded investments comprised 10.8% 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
Allocation	NYC TRS has an Infrastructure allocation target of 2% of total pension assets.	✓	The market value of NYC TRS Infrastructure Program represents approximately 1.4% of total pension assets.
Performance vs. Benchmarks	<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>	✓	As of March 31, 2020, the Portfolio outperformed the CPI and PME benchmark by 4.5% and 5.9%, respectively.
Strategy Diversification	<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>	✓	The Program is in compliance with the Core/Non-Core allocation ranges. Currently the Program has 90.3% exposure to Core investments and 9.7% exposure to Non-Core investments.
Asset Type & Location Diversification	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>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>
Leverage	The average leverage of all investments in the Program is to be no higher than 65%.	✓	The Program is in compliance with the average leverage limitation. The current leverage level is 41.7% ¹ .
Single Investment Size & Manager Diversification	<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 20% 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 20% of the total Infrastructure Program.</p>

¹The Program’s leverage level is calculated by using a weighted average of each underlying investment’s leverage and Net Asset Value as of March 31, 2020.

Risk Quarterly Report (Public):

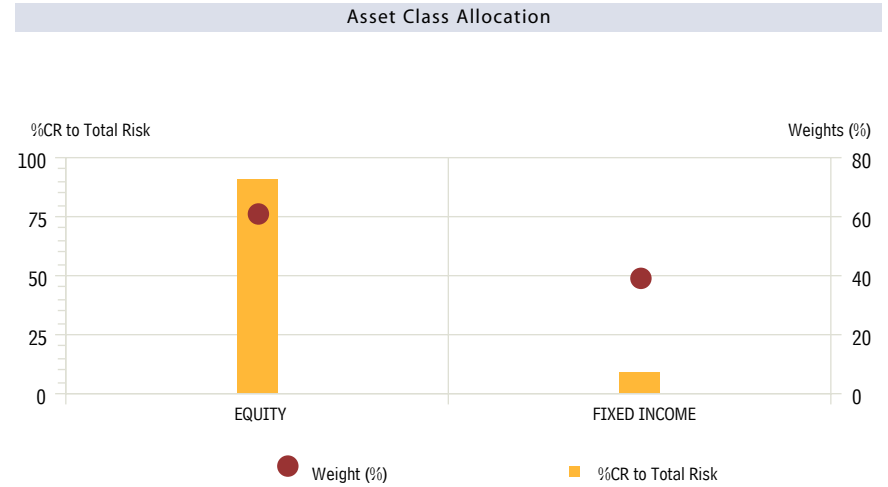
BarraOne Total Plan Summary

COMPANY: NYCRC - TEACHERS
 PORTFOLIO: TEACHERS_Total Plan
 BENCHMARK: TEACHERS_Policy
 POSITIONS: 27,784

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 80,732,107,103
 ACCEPTED: 27,237

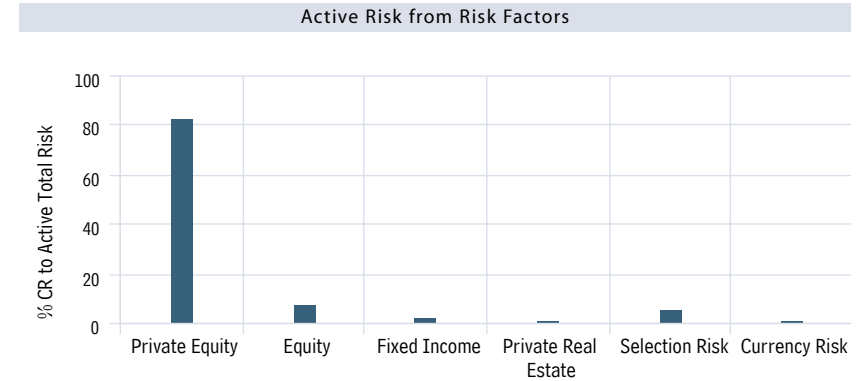
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	14.84	Total	80,732,107,103	100.00	14.84	14.84	100.00
Benchmark Risk	14.79	EQUITY	49,014,063,182	60.71	22.49	13.53	91.18
Active Risk	1.37	FIXED INCOME	31,718,043,921	39.29	5.80	1.31	8.82
Portfolio Beta	1.00						
Effective Duration	2.93						



Risk Factor Breakdown

Risk Source	Risk Decomposition			Risk Decomposition		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	14.84	100.00	1.00	1.37	100.00	1.00
Local Market Risk	14.35	96.69	1.00	1.36	98.78	0.99
Common Factor Risk	14.32	96.49	1.00	1.29	93.78	0.97
Equity	12.52	84.41	0.98	0.11	7.82	0.29
Fixed Income	1.22	8.22	0.53	0.03	2.07	0.13
Private Real Estate	0.47	3.16	0.75	0.02	1.42	0.12
Private Equity	0.10	0.71	0.08	1.13	82.47	0.91
Selection Risk	0.03	0.21	0.05	0.07	4.99	0.22
Currency Risk	0.49	3.31	0.49	0.02	1.22	0.10



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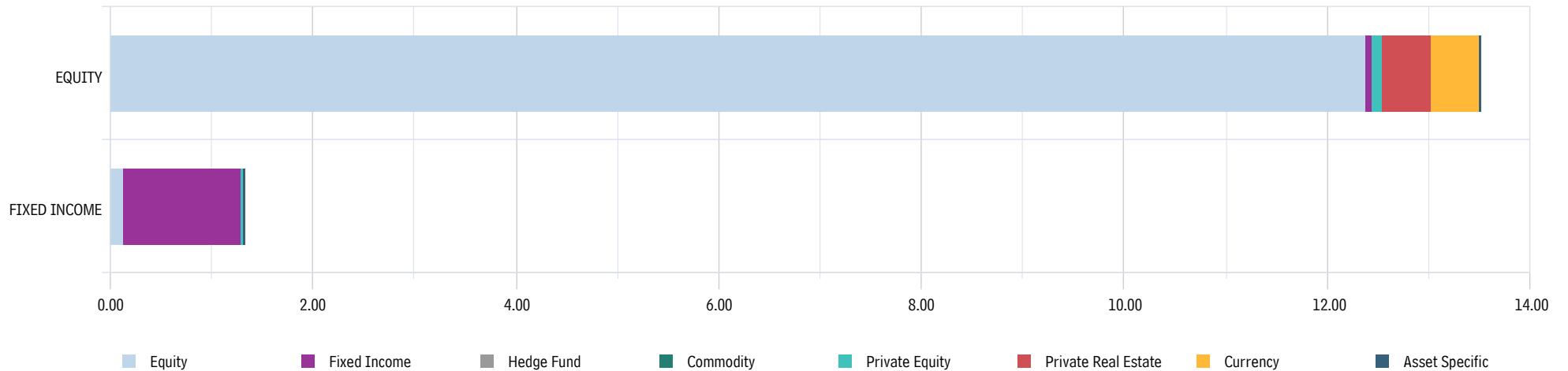
BarraOne Total Plan Summary

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PORTFOLIO: TEACHERS_Total Plan
BENCHMARK: TEACHERS_Policy
POSITIONS: 27,784

CURRENCY: USD
ANALYSIS DATE: June 30, 2020
MARKET VALUE: 80,732,107,103
ACCEPTED: 27,237

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	
Total	80,732,107,103	100.00	100.00	14.84	100.00	14.84	12.52	1.22	0.00	0.00	0.00	0.47	0.10	0.49	0.03
EQUITY	49,014,063,182	60.71	60.71	22.49	91.18	13.53	12.39	0.06	0.00	0.00	0.00	0.47	0.10	0.48	0.03
FIXED INCOME	31,718,043,921	39.29	39.29	5.80	8.82	1.31	0.13	1.16	0.00	0.00	0.00	0.00	0.01	0.01	0.00



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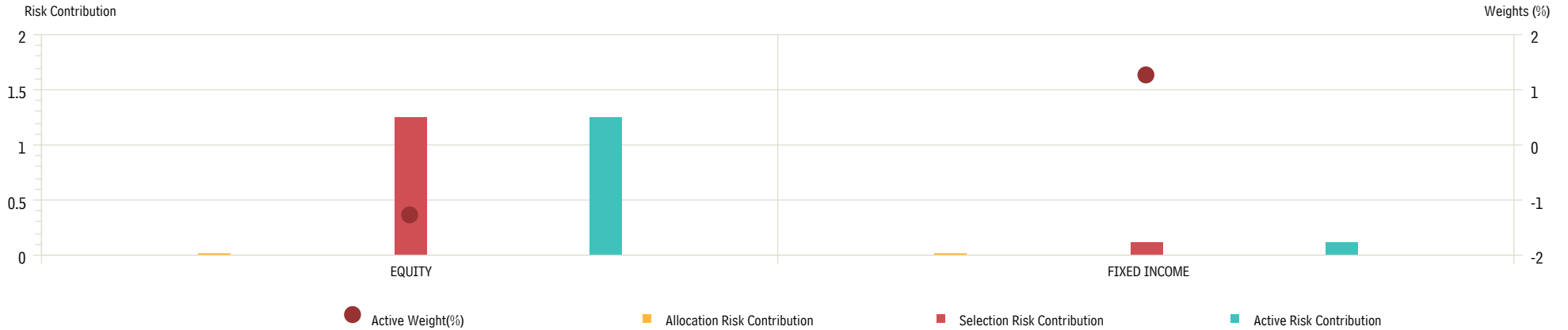
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Allocation Selection

Asset Class	Active Weight(%)	Allocation			Selection			Active	
		Volatility	Correlation	Risk Contribution	Volatility	Correlation	Risk Contribution	Risk Contribution	Risk Contribution
Active Total Risk				0.01			1.36	1.37	
EQUITY	-1.29	7.73	-0.05	0.00	2.13	0.97	1.25	1.26	
FIXED INCOME	1.29	12.61	0.05	0.01	0.71	0.38	0.11	0.12	



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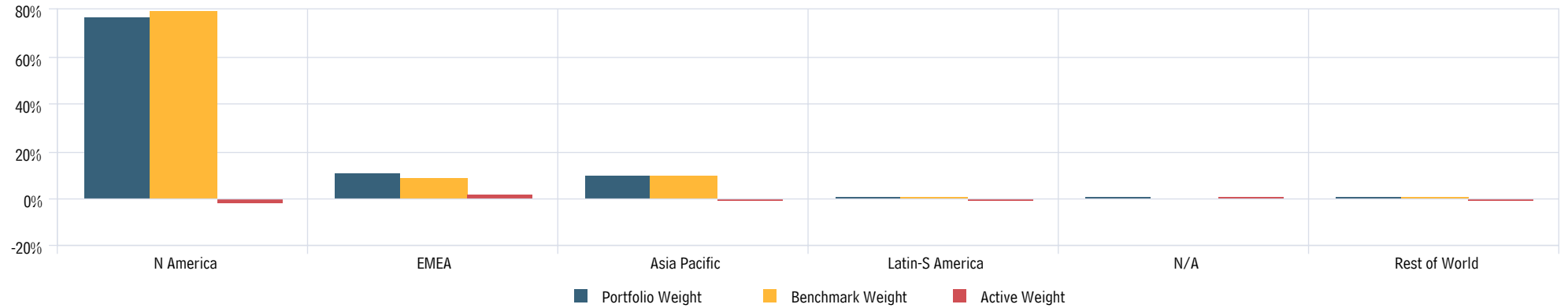
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 POSITIONS: 27,784

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
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 ACCEPTED: 27,237

Portfolio Allocation by Region

Region	Weight (%)			Total Risk	Active Risk CR	% of Active TR	MC to Total Tracking Error
	Portfolio	Benchmark	Active				
Total	100.00	100.00	0.00	14.84	1.37	100.00	0.01
N America	77.09	79.08	-1.99	13.75	1.14	83.05	0.01
EMEA	11.07	9.30	1.77	21.70	0.20	14.22	0.03
Asia Pacific	10.24	10.26	-0.01	20.06	0.03	2.24	0.01
Latin-S America	0.80	0.87	-0.07	35.07	0.00	0.35	0.03
N/A	0.47	0.00	0.47	8.14	0.00	0.20	0.01
Rest of World	0.32	0.50	-0.18	6.77	-0.00	-0.05	0.01



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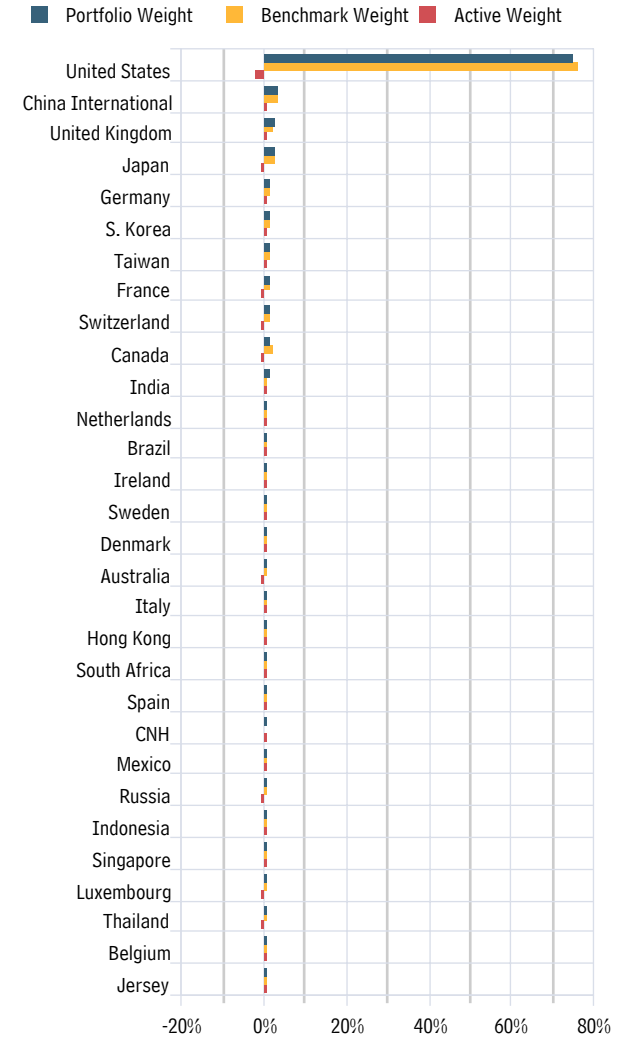
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 POSITIONS: 27,784

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 80,732,107,103
 ACCEPTED: 27,237

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				
Total	100.00	100.00	0.00	14.84	1.37	100.00	0.01
United States	74.48	76.24	-1.75	13.57	1.11	80.98	0.01
China International	3.33	3.20	0.13	22.44	0.00	0.34	0.02
United Kingdom	2.75	1.89	0.86	26.59	0.08	5.86	0.03
Japan	2.45	2.85	-0.41	17.70	0.01	0.53	0.00
Germany	1.50	1.12	0.39	23.27	0.02	1.76	0.03
S. Korea	1.26	1.05	0.21	29.39	0.00	0.29	0.01
Taiwan	1.24	1.09	0.15	21.13	0.00	0.22	0.02
France	1.17	1.27	-0.10	23.64	0.01	0.82	0.03
Switzerland	1.13	1.16	-0.03	18.21	0.01	0.82	0.02
Canada	1.07	1.71	-0.65	19.44	0.01	0.84	0.01
India	1.03	0.72	0.32	31.42	0.01	0.75	0.03
Netherlands	0.88	0.68	0.19	22.57	0.01	0.96	0.02
Brazil	0.64	0.48	0.16	50.89	0.01	0.88	0.04
Ireland	0.49	0.16	0.34	10.74	0.00	0.32	0.01
Sweden	0.47	0.36	0.11	27.66	0.01	0.80	0.03
Denmark	0.47	0.25	0.22	20.99	0.01	0.72	0.03
Australia	0.46	0.79	-0.33	26.27	-0.00	-0.12	0.01
Italy	0.43	0.31	0.12	27.77	0.01	0.90	0.03
Hong Kong	0.42	0.36	0.06	25.52	0.00	0.11	0.01
South Africa	0.37	0.33	0.03	37.31	0.00	0.05	0.02
Spain	0.34	0.29	0.06	24.53	0.00	0.27	0.02
CNH	0.34	0.00	0.34	4.69	0.00	0.11	0.00
Mexico	0.27	0.24	0.03	28.71	0.00	0.11	0.02
Russia	0.26	0.33	-0.07	34.95	0.00	0.04	0.01
Indonesia	0.24	0.18	0.06	33.11	0.00	0.16	0.02
Singapore	0.23	0.15	0.08	24.49	0.00	0.12	0.02
Luxembourg	0.22	0.23	-0.01	13.79	0.00	0.01	0.01
Thailand	0.16	0.22	-0.05	30.90	-0.00	-0.03	0.02
Belgium	0.16	0.16	0.01	22.37	0.00	0.17	0.02
Jersey	0.15	0.00	0.14	0.39	0.00	0.02	0.00



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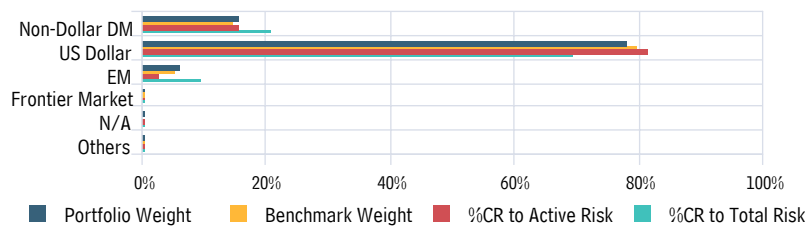
BarraOne Total Plan Summary

COMPANY: NYCRC - TEACHERS
 PORTFOLIO: TEACHERS_Total Plan
 BENCHMARK: TEACHERS_Policy
 POSITIONS: 27,784

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 80,732,107,103
 ACCEPTED: 27,237

Portfolio Allocation by Currency

Exposure by Market



Developed Market Currency

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	62,916,903,944.95	81.16	69.44
Euro	3,594,485,577.16	5.80	6.56
Hong Kong Dollar	2,781,053,832.67	0.49	3.84
Japanese Yen	1,932,523,381.12	0.55	2.19
British Pound Sterling	1,856,953,127.36	5.83	4.22

Emerging Market Currency

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
Korean Won	1,008,815,819.10	0.30	2.03
New Taiwan Dollar	1,001,562,661.14	0.22	1.34
Indian Rupee	827,645,011.34	0.74	1.54
Brazilian Real	507,199,771.67	0.89	1.54
South African Rand	295,105,963.02	0.05	0.70

Top 15 Currencies by Weight%

Currency of Exposure	Weight (%)								
	Portfolio	Benchmark	Active	Total Risk	CR to TR	CR to TR (%)	CR to AR	CR to AR (%)	
Total	100.00	100.00	0.00	14.84	14.84	100.00	1.37	100.00	
US Dollar	77.93	79.78	-1.85	13.39	10.30	69.44	1.11	81.16	
Euro	4.45	3.45	1.01	24.57	0.97	6.56	0.08	5.80	
Hong Kong Dollar	3.44	3.21	0.23	21.75	0.57	3.84	0.01	0.49	
Japanese Yen	2.39	2.73	-0.33	18.01	0.32	2.19	0.01	0.55	
British Pound Sterling	2.30	1.51	0.79	30.62	0.63	4.22	0.08	5.83	
Korean Won	1.25	1.03	0.22	29.50	0.30	2.03	0.00	0.30	
New Taiwan Dollar	1.24	1.09	0.15	21.13	0.20	1.34	0.00	0.22	
Swiss Franc	1.06	1.11	-0.05	18.90	0.16	1.11	0.01	0.83	
Indian Rupee	1.03	0.71	0.32	31.58	0.23	1.54	0.01	0.74	
Brazilian Real	0.63	0.45	0.17	51.61	0.23	1.54	0.01	0.89	
Canadian Dollar	0.47	1.07	-0.60	27.64	0.12	0.79	0.01	0.85	
Danish Krone	0.47	0.25	0.22	21.00	0.06	0.40	0.01	0.72	
Australian Dollar	0.41	0.72	-0.31	27.71	0.10	0.67	-0.00	-0.12	
South African Rand	0.37	0.33	0.03	37.53	0.10	0.70	0.00	0.05	
CNH	0.34	0.00	0.34	4.69	0.00	0.03	0.00	0.11	



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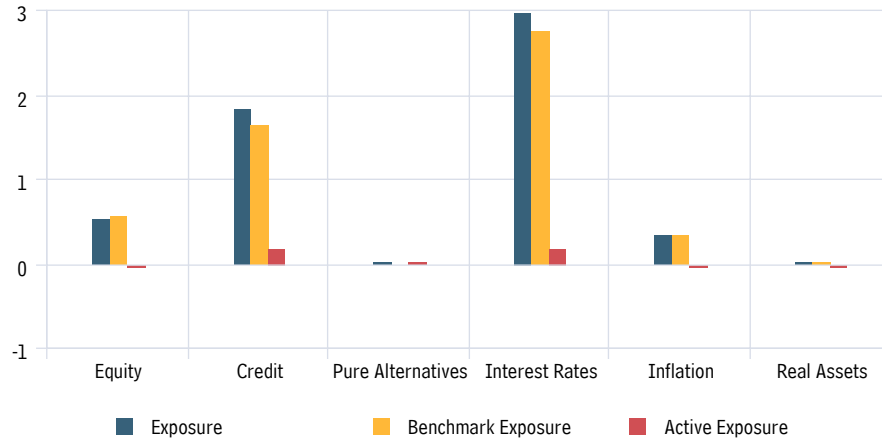
BarraOne Total Plan Macro Summary

Macro factor models attribute the risk of the Barra Integrated Model to a far smaller set of factors. At the highest level, we use just six factors, representing the primary drivers of total risk and return for a global, multi-asset class portfolio that reduces the number of factors in an integrated factor model by aggregating selected groups of factors into single factors. Tier I is the highest level of the Macro Factor Scheme which has 6 factors.

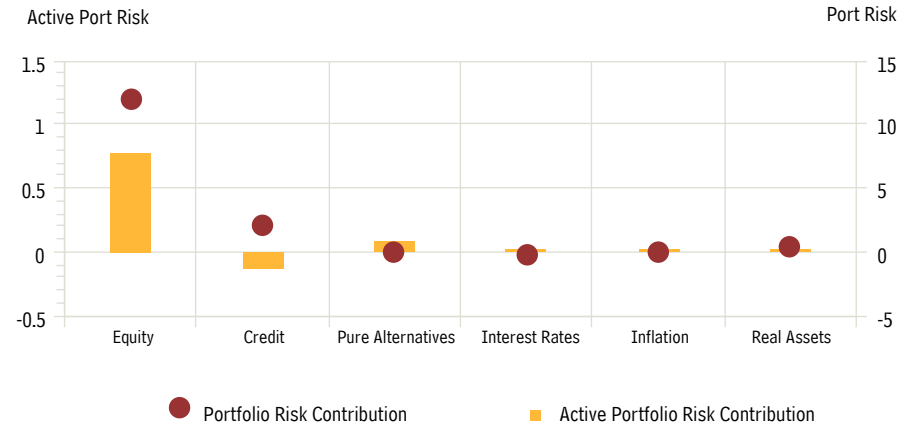
COMPANY: NYCRS - TEACHERS
 PORTFOLIO: TEACHERS_Total Plan
 BENCHMARK: TEACHERS_Policy
 POSITIONS: 27,784
 MODEL: BIM303L (Tier 1 Macro Factors)

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 80,479,829,678
 ACCEPTED: 27,229

Macro Factor Exposures



Macro Factor Risk Contribution



Risk Decomposition

Risk Source	Exposure			Contribution			
	Exposure	Benchmark Exposure	Active Exposure	Portfolio Risk Contribution	% Portfolio Risk	Active Portfolio Risk Contribution	% Active Risk
Total Risk	-	-	-	13.95	100.00	1.22	100.00
Local Market Risk	-	-	-	13.47	96.56	1.23	100.99
Common Factor Risk	-	-	-	13.43	96.28	1.08	88.53
Equity	0.53	0.58	-0.05	12.04	86.30	0.77	63.76
Credit	1.84	1.65	0.19	2.01	14.44	-0.12	-9.83
Pure Alternatives	0.03	0.00	0.03	0.01	0.06	0.09	7.75
Interest Rates	2.98	2.78	0.20	-0.22	-1.59	0.02	1.60
Inflation	0.34	0.36	-0.02	0.09	0.64	0.00	0.29
Real Assets	0.04	0.04	-0.00	0.41	2.91	0.01	0.63
Factor Residual Risk	-	-	-	-0.90	-6.48	0.30	24.32
Selection Risk	-	-	-	0.04	0.28	0.15	12.47
Currency Risk	-	-	-	0.48	3.44	-0.01	-0.99

Tier 1 Macro Factor Scheme has six factors

Factor	Exposure Type	Description
Equity	Membership (weights)	Global Public and Private Equity
Credit	Sensitivities (durations)	Sensitivity to global credit spreads
Pure Alternatives	Membership (weights)	Investment strategy return of Private Equity and Hedge Funds net of public factor returns
Interest Rates	Sensitivities (durations)	Sensitivity to global interest rates
Inflation	Sensitivities (durations)	Sensitivity to breakeven inflation
Real Assets	Membership (weights)	Real Estate and Commodities

Factor Residual Risk

Risk Source	Portfolio Risk Contribution	% Portfolio Risk	Active Portfolio Risk Contribution	% Active Risk
Commodities	0.00	0.00	0.00	0.00
Equity	-0.34	-2.44	0.02	1.81
Fixed Income	-0.63	-4.55	0.15	12.02
Hedge Fund	0.00	0.00	0.00	0.00
Private Equity	0.01	0.04	0.06	5.03
Private Real Estate	0.07	0.48	0.07	5.46
Unassigned Factors	-0.00	-0.00	0.00	0.00



BarraOne Total Plan Summary

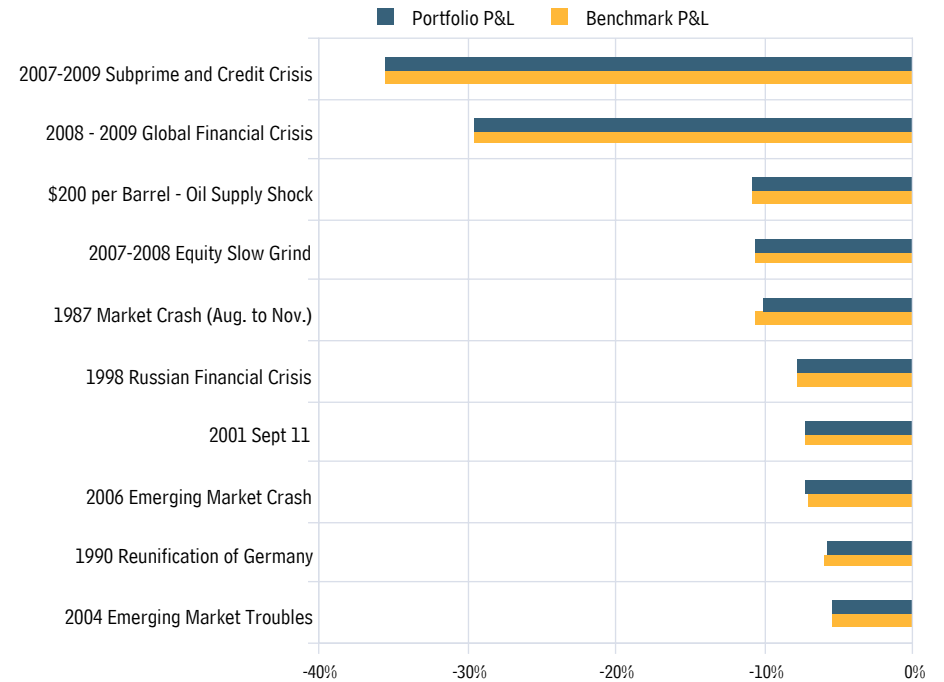
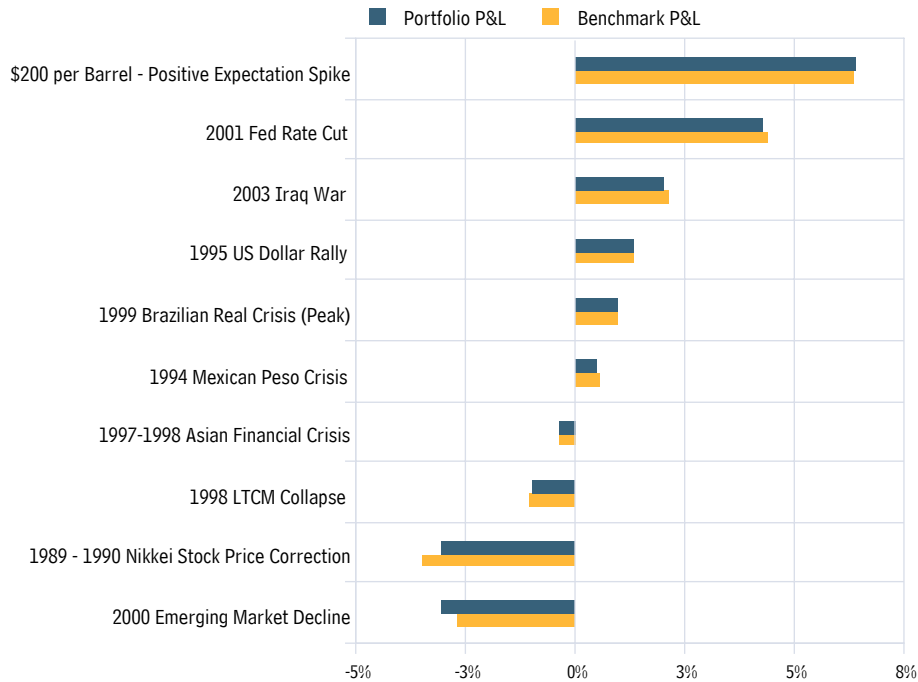
COMPANY: NYCERS - TEACHERS
 PORTFOLIO: TEACHERS_Total Plan
 BENCHMARK: TEACHERS_Policy
 POSITIONS: 27,784
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 80,732,107,103
 ACCEPTED: 27,237

Stress Scenarios

Top 10 Best Scenarios			
Scenario	Portfolio P&L	Benchmark P&L	Market Change (\$)
\$200 per Barrel - Positive Expectation S	6.41	6.37	5,172,586,763
2001 Fed Rate Cut	4.25	4.38	3,434,311,743
2003 Iraq War	2.02	2.13	1,631,057,682
1995 US Dollar Rally	1.36	1.37	1,094,987,634
1999 Brazilian Real Crisis (Peak)	0.96	0.95	777,462,222
1994 Mexican Peso Crisis	0.51	0.56	411,483,333
1997-1998 Asian Financial Crisis	-0.38	-0.37	-304,176,701
1998 LTCM Collapse	-0.98	-1.01	-789,715,803
1989 - 1990 Nikkei Stock Price Correctio	-3.05	-3.51	-2,459,799,206
2000 Emerging Market Decline	-3.07	-2.71	-2,480,225,516

Top 10 Worst Scenarios			
Scenario	Portfolio P&L	Benchmark P&L	Market Change (\$)
2007-2009 Subprime and Credit Crisis	-35.42	-35.42	-28,592,256,435
2008 - 2009 Global Financial Crisis	-29.46	-29.46	-23,783,481,151
\$200 per Barrel - Oil Supply Shock	-10.75	-10.89	-8,678,058,360
2007-2008 Equity Slow Grind	-10.66	-10.54	-8,607,748,988
1987 Market Crash (Aug. to Nov.)	-10.12	-10.58	-8,169,623,830
1998 Russian Financial Crisis	-7.79	-7.74	-6,291,601,481
2001 Sept 11	-7.27	-7.18	-5,867,477,357
2006 Emerging Market Crash	-7.24	-7.08	-5,841,850,527
1990 Reunification of Germany	-5.84	-5.94	-4,714,442,549
2004 Emerging Market Troubles	-5.34	-5.35	-4,307,307,379



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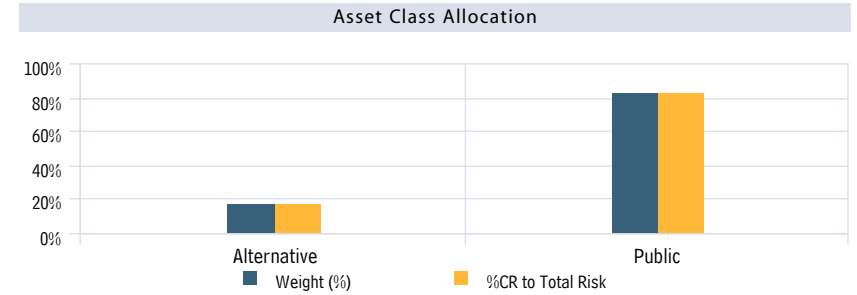
BarraOne Equity Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: EQUITY
 BENCHMARK: EQUITY
 POSITIONS: 17,651
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 49,014,063,182
 ACCEPTED: 17,177

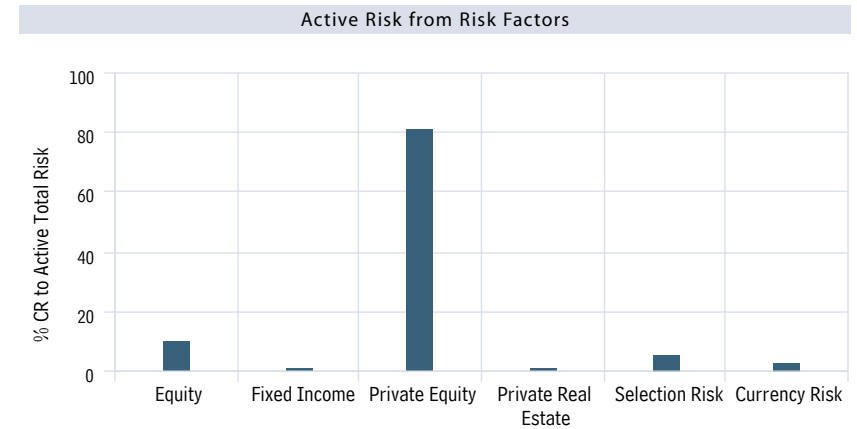
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	22.49	Total	49,014,063,182	100.00	22.49	22.49	100.00
Benchmark Risk	22.11	Alternative	8,412,116,458	17.16	24.26	3.77	16.76
Active Risk	2.13	Public	40,601,946,724	82.84	22.70	18.72	83.24
Portfolio Beta	1.01						



Risk Factor Breakdown

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	22.49	100.00	1.00	2.13	100.00	1.00
Local Market Risk	21.73	96.60	1.00	2.08	97.72	0.99
Common Factor Risk	21.67	96.36	1.00	1.97	92.71	0.97
Equity	20.67	91.90	0.99	0.21	9.76	0.33
Style	0.32	1.41	0.62	0.07	3.25	0.19
Industry	20.35	90.49	0.99	0.14	6.51	0.29
Fixed Income	0.08	0.37	0.61	0.02	0.92	0.17
Nominal Rates	-0.02	-0.11	-0.33	-0.00	-0.17	-0.05
Real Rates	0.00	0.00	0.00	-0.01	-0.27	-0.13
Credit	0.11	0.49	0.75	0.03	1.37	0.20
Private Real Estate	0.76	3.36	0.73	0.02	0.75	0.06
Private Equity	0.16	0.73	0.09	1.73	81.28	0.90
Selection Risk	0.05	0.24	0.05	0.11	5.01	0.22
Currency Risk	0.77	3.40	0.47	0.05	2.28	0.18



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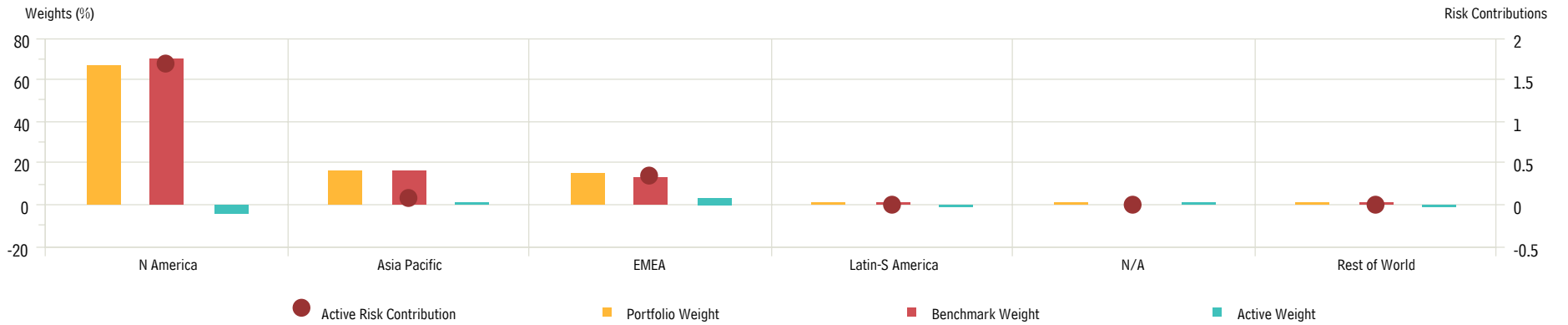
BarraOne Equity Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: EQUITY
 BENCHMARK: EQUITY
 POSITIONS: 17,651
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 49,014,063,182
 ACCEPTED: 17,177

Portfolio Allocation by Region

Region	Weight (%)			Total Risk	Active Risk CR	% of Active TR	MC to Total Tracking Error
	Portfolio	Benchmark	Active				
Total	100.00	100.00	-0.00	22.49	2.13	100.00	0.02
Asia Pacific	16.63	15.95	0.67	20.27	0.08	3.53	0.01
EMEA	15.33	12.46	2.87	24.63	0.35	16.65	0.04
Latin-S America	1.07	1.09	-0.02	40.80	0.01	0.36	0.06
N America	66.30	70.31	-4.00	23.79	1.70	79.99	0.02
N/A	0.55	0.00	0.55	4.71	-0.01	-0.61	-0.02
Rest of World	0.12	0.19	-0.07	20.30	0.00	0.08	0.01



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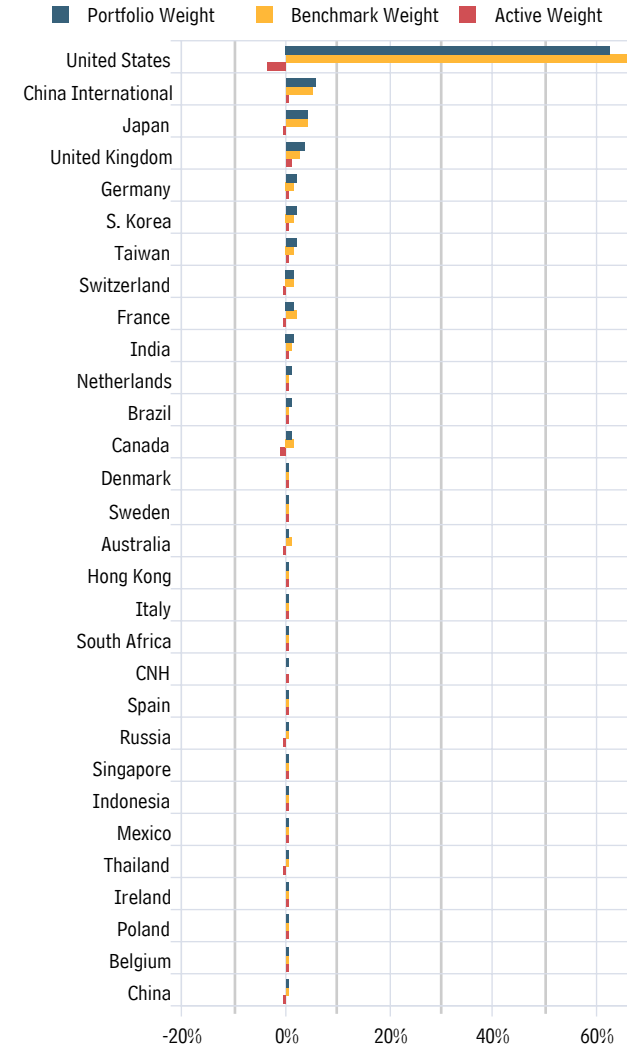
BarraOne Equity Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: EQUITY
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 POSITIONS: 17,651
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 49,014,063,182
 ACCEPTED: 17,177

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				
Total	100.00	100.00	-0.00	22.49	2.13	100.00	0.02
United States	62.91	66.75	-3.84	23.94	1.65	77.27	0.05
China International	5.49	5.17	0.33	22.44	0.01	0.44	0.04
Japan	3.94	4.40	-0.46	18.02	0.02	0.73	0.02
United Kingdom	3.71	2.44	1.27	30.96	0.16	7.52	0.08
Germany	2.31	1.60	0.71	24.57	0.04	1.76	0.06
S. Korea	2.06	1.66	0.41	29.50	0.01	0.59	0.05
Taiwan	2.04	1.75	0.29	21.13	0.01	0.24	0.04
Switzerland	1.75	1.79	-0.04	18.87	0.02	1.07	0.04
France	1.73	1.89	-0.15	25.32	0.01	0.50	0.07
India	1.69	1.14	0.55	31.58	0.02	0.92	0.06
Netherlands	1.15	0.75	0.41	26.92	0.03	1.41	0.06
Brazil	1.04	0.73	0.30	51.50	0.03	1.51	0.11
Canada	0.88	1.73	-0.85	28.10	0.01	0.41	0.05
Denmark	0.76	0.41	0.35	21.37	0.01	0.54	0.05
Sweden	0.76	0.53	0.23	28.24	0.02	0.89	0.07
Australia	0.71	1.17	-0.45	27.43	-0.01	-0.43	0.05
Hong Kong	0.69	0.56	0.13	25.67	0.00	0.13	0.04
Italy	0.66	0.40	0.26	29.33	0.02	1.00	0.07
South Africa	0.60	0.54	0.06	37.62	0.00	0.09	0.07
CNH	0.55	0.00	0.55	4.69	-0.01	-0.61	0.01
Spain	0.48	0.42	0.06	28.02	0.01	0.30	0.05
Russia	0.44	0.46	-0.02	34.95	0.00	0.02	0.06
Singapore	0.38	0.22	0.16	24.60	0.00	0.13	0.05
Indonesia	0.33	0.21	0.12	37.84	0.01	0.27	0.07
Mexico	0.31	0.25	0.07	36.04	0.00	0.22	0.07
Thailand	0.27	0.35	-0.08	30.90	0.00	0.02	0.05
Ireland	0.24	0.11	0.13	30.84	0.01	0.28	0.06
Poland	0.23	0.10	0.13	31.54	0.01	0.46	0.09
Belgium	0.21	0.16	0.05	26.53	0.00	0.15	0.06
China	0.20	0.67	-0.47	71.02	0.01	0.57	0.02



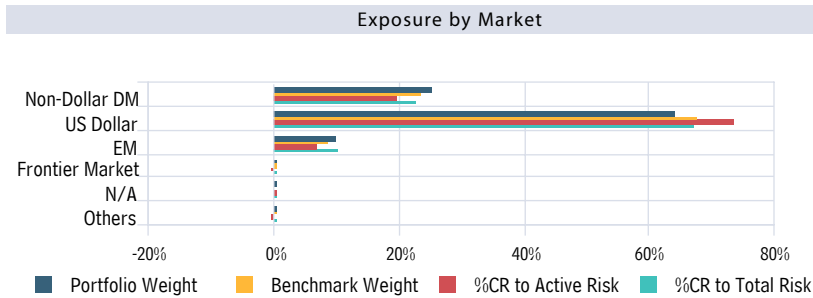
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BarraOne Equity Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: EQUITY
 BENCHMARK: EQUITY
 POSITIONS: 17,651
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 49,014,063,182
 ACCEPTED: 17,177

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	31,469,705,355.54	77.91	67.00	Korean Won	1,008,815,817.03	0.58	2.22
Euro	3,399,092,642.82	6.13	6.95	New Taiwan Dollar	1,001,562,608.17	0.24	1.46
Hong Kong Dollar	2,781,053,832.67	0.61	4.22	Indian Rupee	827,645,011.34	0.92	1.64
Japanese Yen	1,930,479,705.77	0.73	2.39	Brazilian Real	507,199,771.67	1.51	1.67
British Pound Sterling	1,809,387,094.59	7.53	4.57	South African Rand	293,816,636.62	0.09	0.75

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					
Total	100.00	100.00	-0.00	22.49	22.49	100.00	2.13	100.00
US Dollar	64.21	67.39	-3.19	23.82	15.07	67.00	1.66	77.91
Euro	6.93	5.56	1.38	25.12	1.56	6.95	0.13	6.13
Hong Kong Dollar	5.67	5.18	0.50	21.75	0.95	4.22	0.01	0.61
Japanese Yen	3.94	4.40	-0.46	18.02	0.54	2.39	0.02	0.73
British Pound Sterling	3.69	2.44	1.25	31.10	1.03	4.57	0.16	7.53
Korean Won	2.06	1.66	0.40	29.50	0.50	2.22	0.01	0.58
New Taiwan Dollar	2.04	1.75	0.29	21.13	0.33	1.46	0.01	0.24
Swiss Franc	1.75	1.79	-0.04	18.90	0.27	1.21	0.02	1.08
Indian Rupee	1.69	1.14	0.55	31.58	0.37	1.64	0.02	0.92
Brazilian Real	1.03	0.73	0.30	51.61	0.37	1.67	0.03	1.51
Danish Krone	0.76	0.41	0.35	21.38	0.09	0.42	0.01	0.54
Canadian Dollar	0.75	1.73	-0.98	27.55	0.19	0.83	0.01	0.27
Australian Dollar	0.68	1.17	-0.49	27.72	0.16	0.72	-0.01	-0.45
South African Rand	0.60	0.54	0.06	37.62	0.17	0.75	0.00	0.09
CNH	0.55	0.00	0.55	4.69	0.01	0.03	-0.01	-0.61



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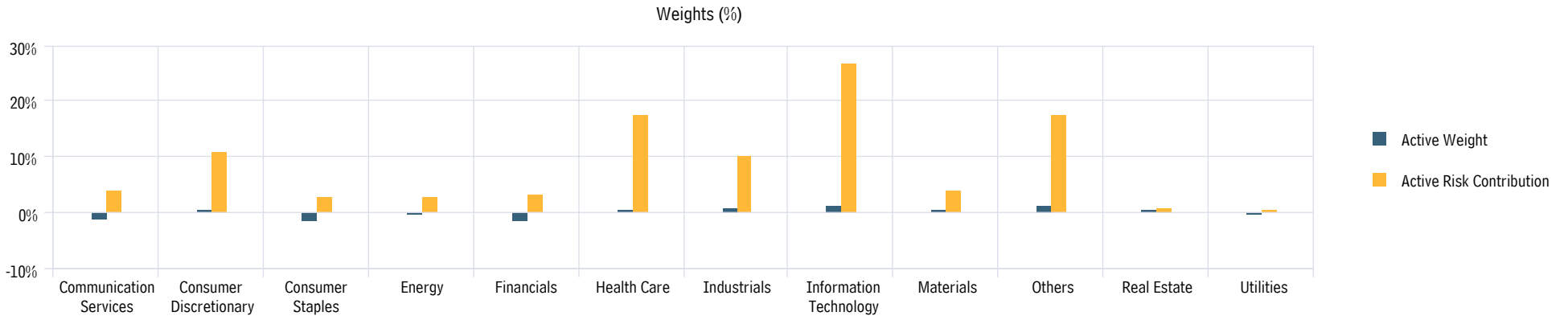
BarraOne Equity Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: EQUITY
 BENCHMARK: EQUITY
 POSITIONS: 17,651
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 49,014,063,182
 ACCEPTED: 17,177

Portfolio Allocation by GICS Sector

GICS Sector	Weight (%)			Total Risk	Active Risk CR	%CR to Active TR	MC to Active TR
	Portfolio	Benchmark	Active				
Total	100.00	100.00	-0.00	22.49	2.13	100.00	0.02
Communication Services	7.61	8.61	-1.00	20.06	0.08	3.83	0.05
Consumer Discretionary	11.55	11.07	0.49	25.46	0.23	10.72	0.07
Consumer Staples	5.23	6.72	-1.49	16.97	0.06	2.84	0.03
Energy	3.11	3.20	-0.09	40.96	0.06	2.80	0.09
Financials	10.75	12.21	-1.46	28.94	0.07	3.10	0.06
Health Care	11.88	11.78	0.10	20.60	0.37	17.60	0.07
Industrials	9.14	8.43	0.71	26.77	0.21	9.95	0.07
Information Technology	20.64	19.47	1.17	23.31	0.57	26.79	0.08
Materials	4.61	4.05	0.57	25.60	0.08	3.97	0.06
Others	8.25	7.05	1.19	18.04	0.37	17.56	0.02
Real Estate	4.88	4.61	0.27	30.91	0.02	0.71	0.05
Utilities	2.34	2.80	-0.47	20.13	0.00	0.13	0.03



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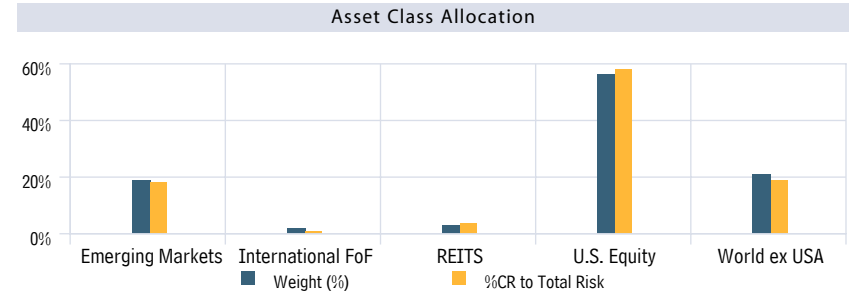
BarraOne Equity Summary

COMPANY: NYCRS - TEACHERS
 PORTFOLIO: Public Equity
 BENCHMARK: Public
 POSITIONS: 17,358
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 40,601,946,724
 ACCEPTED: 16,885

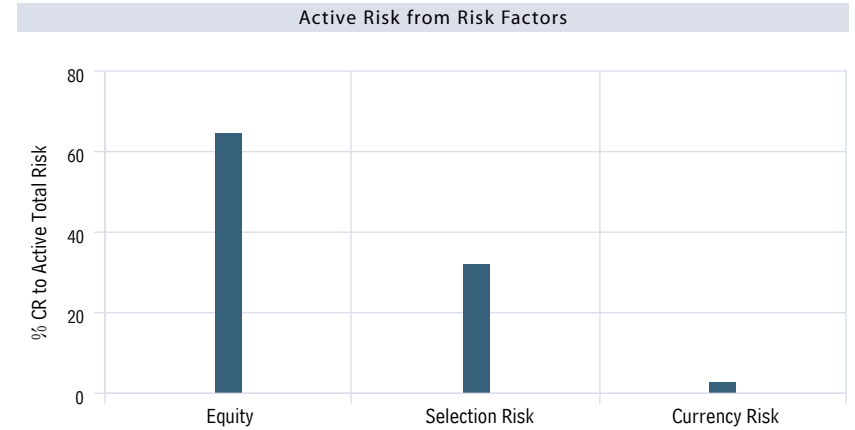
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	22.70	Total	40,601,946,724	100.00	22.70	22.70	100.00
Benchmark Risk	22.71	Emerging Markets	7,896,012,721	19.45	23.04	4.07	17.91
Active Risk	0.72	International FoF	587,155,134	1.45	21.34	0.29	1.29
Portfolio Beta	1.00	REITS	1,057,147,050	2.60	35.03	0.83	3.66
		U.S. Equity	22,640,381,779	55.76	24.31	13.29	58.53
		World ex USA	8,421,250,040	20.74	21.48	4.22	18.60



Risk Factor Breakdown

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	22.70	100.00	1.00	0.72	100.00	1.00
Local Market Risk	21.90	96.47	1.00	0.70	97.18	0.98
Common Factor Risk	21.83	96.14	1.00	0.47	64.97	0.80
Equity	21.83	96.14	1.00	0.47	64.96	0.80
Style	0.23	1.00	0.46	0.18	25.41	0.48
Industry	21.60	95.14	1.00	0.29	39.54	0.64
Selection Risk	0.08	0.33	0.06	0.23	32.22	0.57
Currency Risk	0.80	3.53	0.47	0.02	2.82	0.16



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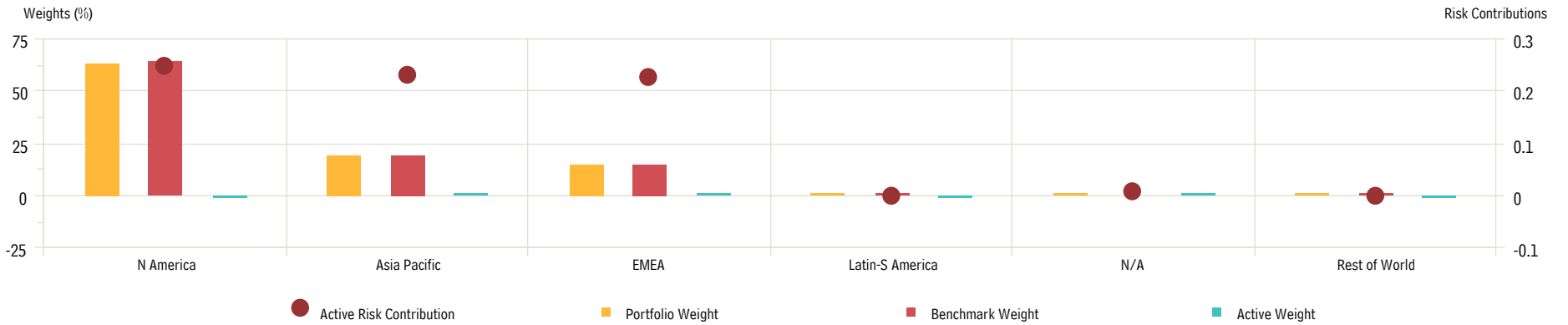
BarraOne Equity Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: Public Equity
 BENCHMARK: Public
 POSITIONS: 17,358
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 40,601,946,724
 ACCEPTED: 16,885

Portfolio Allocation by Region

Region	Weight (%)			Active	Total Risk	Active Risk CR	% of Active TR	MC to Total Tracking Error
	Portfolio	Benchmark						
Total	100.00	100.00		-0.00	22.70	0.72	100.00	0.01
Asia Pacific	19.49	18.96		0.53	20.49	0.23	32.07	0.02
EMEA	14.88	14.81		0.07	24.52	0.23	31.82	0.02
Latin-S America	1.23	1.30		-0.07	41.74	0.00	0.05	0.05
N America	63.60	64.70		-1.10	24.26	0.25	34.84	0.01
N/A	0.67	0.00		0.67	4.69	0.01	1.23	0.01
Rest of World	0.13	0.23		-0.10	20.67	-0.00	-0.01	0.01



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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				
Total	100.00	100.00	-0.00	22.70	0.72	100.00	0.01
United States	59.80	60.48	-0.68	24.46	0.14	19.49	-0.00
China International	6.61	6.14	0.47	22.44	0.04	5.09	0.04
Japan	4.52	5.23	-0.71	18.55	0.07	9.04	-0.01
United Kingdom	3.03	2.90	0.13	30.44	0.05	6.93	-0.01
Taiwan	2.47	2.08	0.39	21.13	0.02	2.96	0.04
S. Korea	2.47	1.97	0.50	29.62	0.02	3.11	0.03
Germany	2.26	1.90	0.35	26.69	0.06	7.96	0.03
India	1.96	1.36	0.60	31.67	0.05	7.41	0.07
Switzerland	1.88	2.12	-0.24	19.00	0.02	2.17	0.00
France	1.70	2.24	-0.54	26.14	0.00	0.31	0.00
Brazil	1.20	0.87	0.33	52.73	0.02	3.33	0.05
Netherlands	1.20	0.89	0.31	28.28	0.03	4.72	0.03
Denmark	0.85	0.48	0.37	21.36	0.03	4.30	0.05
Hong Kong	0.83	0.67	0.16	25.71	0.01	1.49	0.03
Canada	0.77	2.05	-1.28	29.47	0.04	5.61	-0.03
Sweden	0.74	0.63	0.12	29.36	0.03	4.36	0.04
Australia	0.74	1.39	-0.65	28.29	0.01	1.78	-0.01
South Africa	0.71	0.64	0.07	37.86	0.00	0.43	0.03
CNH	0.67	0.00	0.67	4.69	0.01	1.23	0.01
Italy	0.59	0.47	0.12	31.53	0.01	1.43	0.00
Russia	0.52	0.55	-0.03	35.01	0.01	0.77	-0.00
Spain	0.47	0.50	-0.02	30.74	0.00	0.69	-0.01
Singapore	0.44	0.26	0.18	24.89	0.01	0.96	0.03
Indonesia	0.40	0.25	0.15	37.84	0.01	1.31	0.05
Mexico	0.37	0.29	0.08	36.27	0.01	0.97	0.04
Thailand	0.32	0.41	-0.09	30.97	-0.00	-0.16	0.02
Ireland	0.22	0.13	0.09	37.20	0.00	0.67	0.03
Malaysia	0.21	0.30	-0.09	21.93	-0.00	-0.25	0.02
Finland	0.21	0.21	-0.00	26.57	0.00	0.45	0.02
Norway	0.20	0.11	0.10	35.13	0.00	0.47	0.00



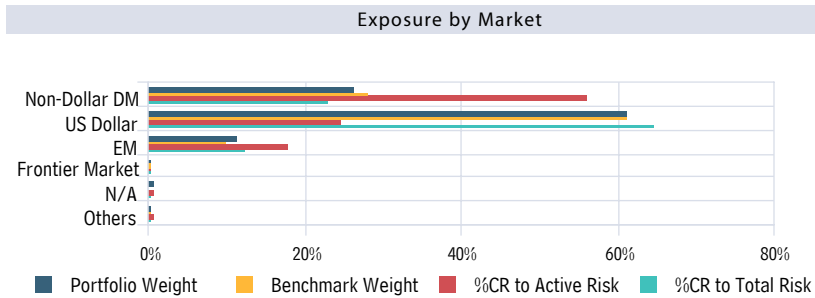
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BarraOne Equity Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: Public Equity
 BENCHMARK: Public
 POSITIONS: 17,358
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 40,601,946,724
 ACCEPTED: 16,885

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	24,855,591,901.20	24.69	64.54	New Taiwan Dollar	1,001,562,608.17	2.96	1.77
Euro	2,813,510,291.53	17.20	7.12	Korean Won	999,282,030.01	3.08	2.66
Hong Kong Dollar	2,778,705,085.38	6.85	5.12	Indian Rupee	796,364,328.74	7.41	1.89
Japanese Yen	1,835,590,524.09	9.04	2.83	Brazilian Real	486,457,121.84	3.33	1.95
British Pound Sterling	1,227,984,135.15	6.91	3.67	South African Rand	289,531,975.34	0.43	0.90

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					
Total	100.00	100.00	-0.00	22.70	22.70	100.00	0.72	100.00
US Dollar	61.22	61.24	-0.02	24.35	14.65	64.54	0.18	24.69
Euro	6.93	6.61	0.32	25.85	1.62	7.12	0.12	17.20
Hong Kong Dollar	6.84	6.15	0.69	21.75	1.16	5.12	0.05	6.85
Japanese Yen	4.52	5.23	-0.71	18.55	0.64	2.83	0.07	9.04
British Pound Sterling	3.02	2.90	0.12	30.43	0.83	3.67	0.05	6.91
New Taiwan Dollar	2.47	2.08	0.39	21.13	0.40	1.77	0.02	2.96
Korean Won	2.46	1.97	0.49	29.62	0.60	2.66	0.02	3.08
Indian Rupee	1.96	1.36	0.60	31.67	0.43	1.89	0.05	7.41
Swiss Franc	1.88	2.12	-0.24	19.00	0.30	1.31	0.02	2.17
Brazilian Real	1.20	0.87	0.33	52.73	0.44	1.95	0.02	3.33
Danish Krone	0.85	0.48	0.36	21.37	0.10	0.43	0.03	4.29
South African Rand	0.71	0.64	0.08	37.86	0.20	0.90	0.00	0.43
Australian Dollar	0.70	1.39	-0.69	28.65	0.17	0.76	0.01	1.47
CNH	0.67	0.00	0.67	4.69	0.01	0.04	0.01	1.23
Canadian Dollar	0.66	2.05	-1.39	27.90	0.16	0.72	0.04	5.75



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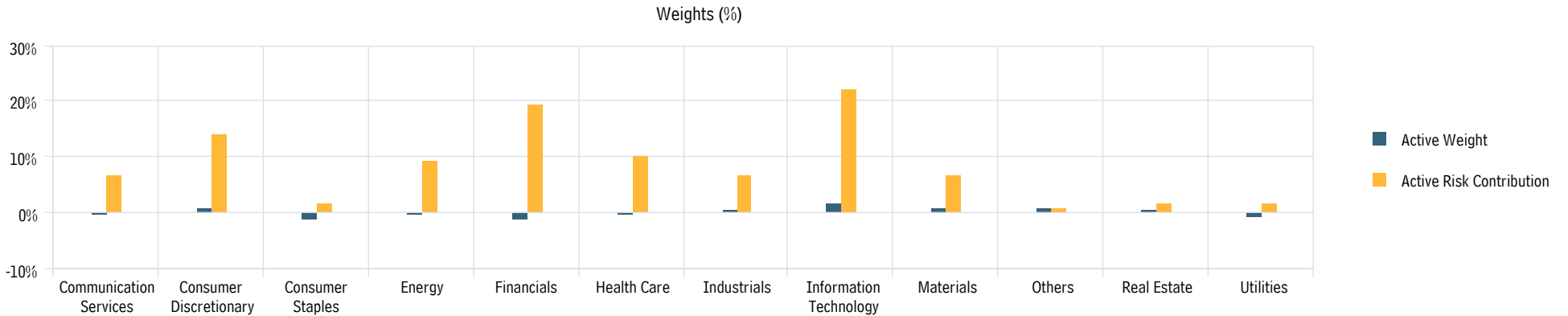
BarraOne Equity Summary

COMPANY: NYCRS - TEACHERS
 PORTFOLIO: Public Equity
 BENCHMARK: Public
 POSITIONS: 17,358
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 40,601,946,724
 ACCEPTED: 16,885

Portfolio Allocation by GICS Sector

GICS Sector	Weight (%)			Total Risk	Active Risk CR	%CR to Active TR	MC to Active TR
	Portfolio	Benchmark	Active				
Total	100.00	100.00	-0.00	22.70	0.72	100.00	0.01
Communication Services	8.64	9.20	-0.56	19.93	0.05	6.80	0.02
Consumer Discretionary	12.62	11.97	0.65	24.86	0.10	13.96	0.03
Consumer Staples	6.03	7.33	-1.30	16.70	0.01	1.43	-0.00
Energy	3.22	3.53	-0.31	41.25	0.07	9.39	-0.01
Financials	12.38	13.41	-1.03	29.12	0.14	19.32	-0.00
Health Care	12.00	12.44	-0.43	19.58	0.07	10.04	0.02
Industrials	9.37	9.10	0.26	27.12	0.05	6.66	0.00
Information Technology	22.03	20.36	1.67	22.70	0.16	22.02	0.04
Materials	5.18	4.53	0.66	25.50	0.05	6.72	0.01
Others	0.76	0.00	0.76	1.97	0.01	0.72	0.00
Real Estate	5.57	5.10	0.47	31.64	0.01	1.36	-0.00
Utilities	2.20	3.02	-0.82	24.18	0.01	1.58	-0.01



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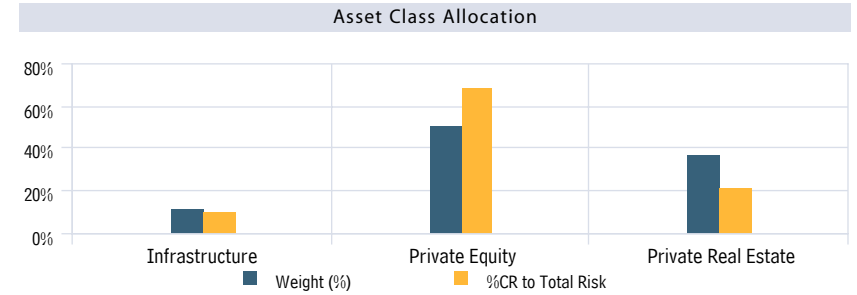
BarraOne Equity Summary

COMPANY: NYCRC - TEACHERS
 PORTFOLIO: Alternative
 BENCHMARK: Alternative
 POSITIONS: 293
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 8,412,116,458
 ACCEPTED: 292

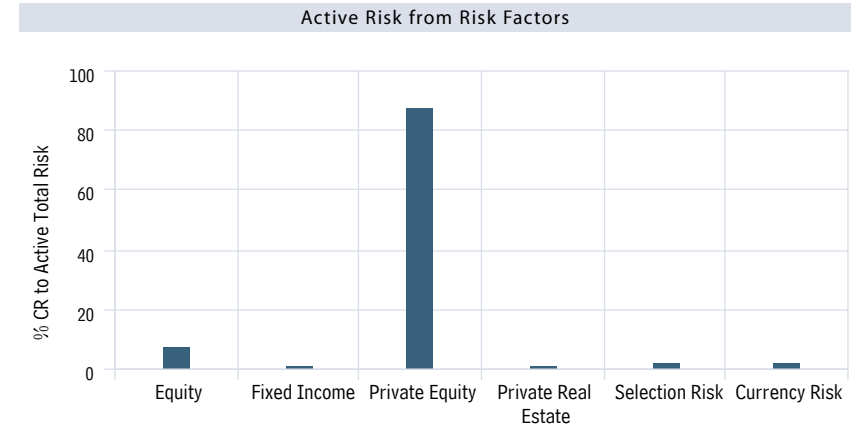
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	24.26	Total	8,412,116,458	100.00	24.26	24.26	100.00
Benchmark Risk	19.91	Infrastructure	994,962,504	11.83	22.75	2.53	10.43
Active Risk	11.98	Private Equity	4,291,916,182	51.02	33.36	16.56	68.29
Portfolio Beta	1.06	Private Real Estate	3,125,237,773	37.15	17.79	5.16	21.28



Risk Factor Breakdown

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	24.26	100.00	1.00	11.98	100.00	1.00
Local Market Risk	23.72	97.78	1.00	11.74	98.03	0.99
Common Factor Risk	23.68	97.63	1.00	11.47	95.78	0.98
Equity	13.60	56.08	0.86	0.82	6.85	0.27
Style	0.69	2.86	0.60	0.21	1.79	0.19
Industry	12.91	53.22	0.86	0.61	5.06	0.26
Fixed Income	0.46	1.90	0.57	0.10	0.81	0.15
Nominal Rates	-0.11	-0.46	-0.25	-0.04	-0.31	-0.09
Real Rates	0.00	0.00	0.00	-0.04	-0.30	-0.13
Credit	0.57	2.35	0.68	0.17	1.43	0.20
Private Real Estate	4.46	18.38	0.74	0.11	0.90	0.05
Private Equity	5.16	21.26	0.46	10.45	87.22	0.93
Selection Risk	0.04	0.16	0.04	0.27	2.25	0.15
Currency Risk	0.54	2.22	0.39	0.24	1.97	0.17



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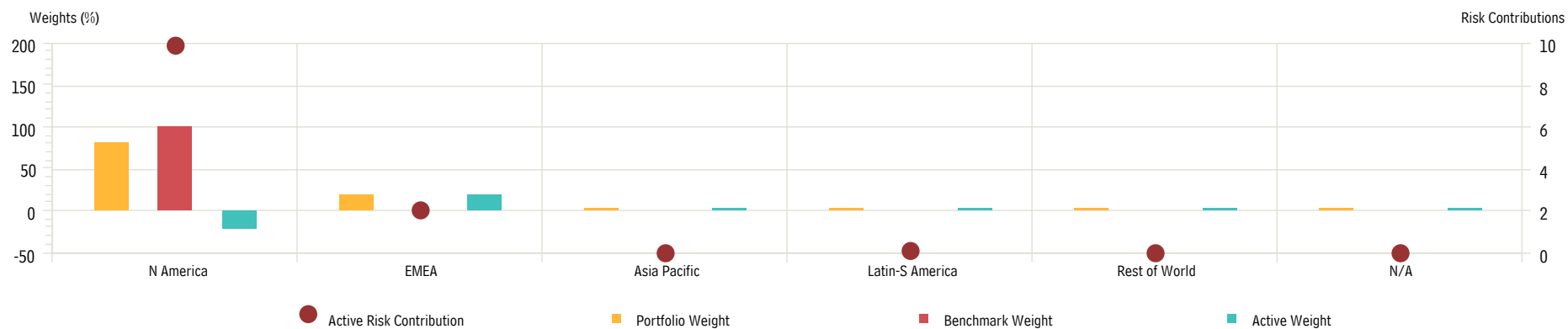
BarraOne Equity Summary

COMPANY: NYCRC - TEACHERS
 PORTFOLIO: Alternative
 BENCHMARK: Alternative
 POSITIONS: 293
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 8,412,116,458
 ACCEPTED: 292

Portfolio Allocation by Region

Region	Weight (%)			Total Risk	Active Risk CR	% of Active TR	MC to Total Tracking Error
	Portfolio	Benchmark	Active				
Total	100.00	100.00	-0.00	24.26	11.98	100.00	0.12
Asia Pacific	2.79	0.00	2.79	16.15	0.02	0.18	0.01
EMEA	17.48	0.00	17.48	29.98	2.03	16.97	0.10
Latin-S America	0.31	0.00	0.31	39.19	0.07	0.58	0.22
N America	79.34	100.00	-20.66	25.27	9.85	82.20	0.04
N/A	0.02	0.00	0.02	28.27	0.00	0.01	0.04
Rest of World	0.07	0.00	0.07	31.89	0.01	0.07	0.12



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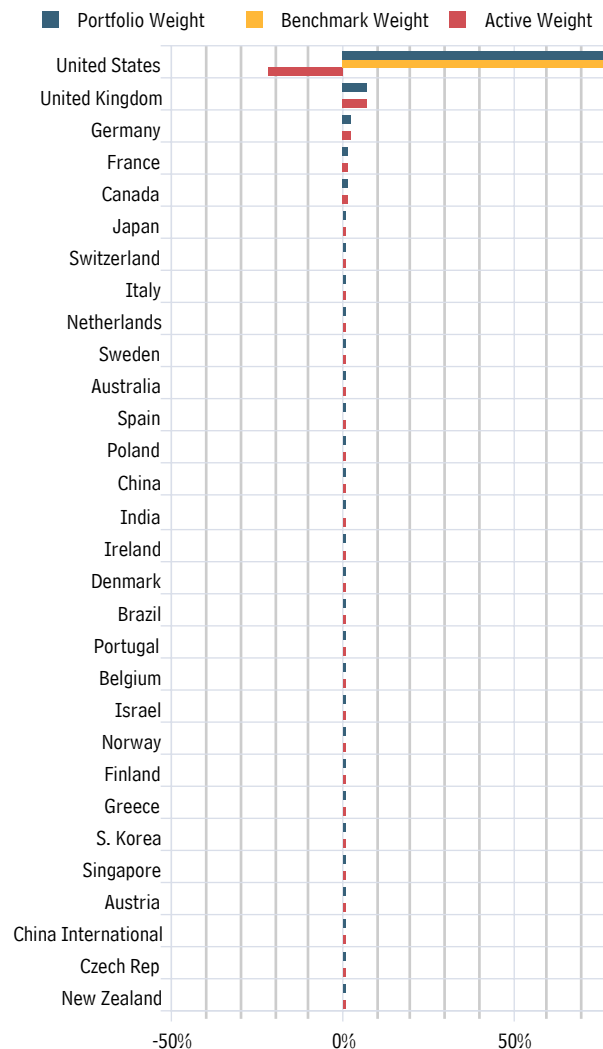
BarraOne Equity Summary

COMPANY: NYCRS - TEACHERS
 PORTFOLIO: Alternative
 BENCHMARK: Alternative
 POSITIONS: 293
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 8,412,116,458
 ACCEPTED: 292

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				
Total	100.00	100.00	-0.00	24.26	11.98	100.00	0.12
United States	77.90	100.00	-22.10	25.31	9.69	80.92	0.06
United Kingdom	7.03	0.00	7.03	36.10	0.94	7.82	0.15
Germany	2.58	0.00	2.58	19.87	0.17	1.45	0.09
France	1.90	0.00	1.90	27.92	0.19	1.59	0.12
Canada	1.37	0.00	1.37	27.37	0.15	1.27	0.13
Japan	1.13	0.00	1.13	17.84	-0.01	-0.05	0.02
Switzerland	1.10	0.00	1.10	25.74	0.10	0.86	0.11
Italy	0.99	0.00	0.99	30.03	0.11	0.91	0.13
Netherlands	0.94	0.00	0.94	27.50	0.10	0.84	0.13
Sweden	0.82	0.00	0.82	32.52	0.09	0.78	0.13
Australia	0.59	0.00	0.59	27.45	0.01	0.11	0.04
Spain	0.52	0.00	0.52	22.29	0.04	0.30	0.09
Poland	0.47	0.00	0.47	37.02	0.05	0.45	0.14
China	0.40	0.00	0.40	13.08	-0.00	-0.03	0.01
India	0.37	0.00	0.37	35.99	0.01	0.09	0.05
Ireland	0.34	0.00	0.34	19.98	0.02	0.13	0.07
Denmark	0.33	0.00	0.33	39.54	0.05	0.41	0.17
Brazil	0.26	0.00	0.26	45.15	0.07	0.57	0.28
Portugal	0.25	0.00	0.25	24.90	0.03	0.21	0.12
Belgium	0.23	0.00	0.23	27.23	0.02	0.20	0.12
Israel	0.21	0.00	0.21	35.93	0.03	0.25	0.16
Norway	0.17	0.00	0.17	30.10	0.02	0.13	0.11
Finland	0.14	0.00	0.14	41.28	0.02	0.18	0.18
Greece	0.13	0.00	0.13	49.80	0.02	0.16	0.17
S. Korea	0.11	0.00	0.11	20.67	0.00	0.01	0.03
Singapore	0.09	0.00	0.09	27.33	0.00	0.02	0.04
Austria	0.08	0.00	0.08	22.50	0.00	0.03	0.07
China International	0.08	0.00	0.08	34.07	0.00	0.02	0.05
Czech Rep	0.06	0.00	0.06	22.95	0.00	0.04	0.09
New Zealand	0.05	0.00	0.05	30.30	0.00	0.02	0.06



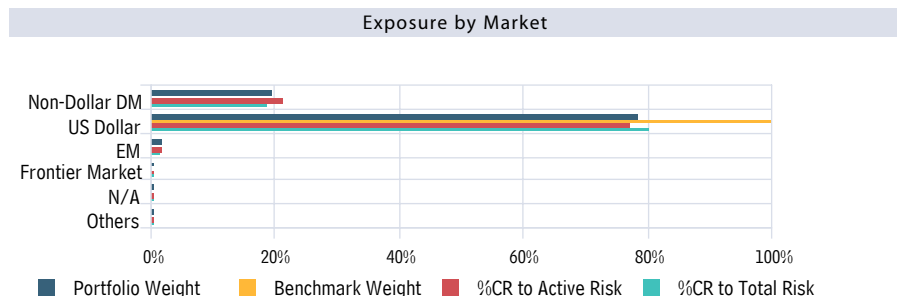
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BarraOne Equity Summary

COMPANY: NYCRS - TEACHERS
 PORTFOLIO: Alternative
 BENCHMARK: Alternative
 POSITIONS: 293
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 8,412,116,458
 ACCEPTED: 292

Portfolio Allocation by Currency



Developed Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	6,614,113,454.34	80.92	80.32
Euro	585,582,351.29	6.12	5.80
British Pound Sterling	581,402,959.44	7.83	8.19
Canadian Dollar	100,532,027.82	1.25	1.27
Japanese Yen	94,889,181.68	-0.05	0.25

Emerging Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
Polish Zloty	39,121,268.17	0.45	0.38
Indian Rupee	31,280,682.60	0.09	0.30
Chinese Yuan	30,820,646.05	-0.03	0.06
Brazilian Real	20,742,649.83	0.57	0.31
Korean Won	9,533,787.01	0.01	0.06

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					
Total	100.00	100.00	-0.00	24.26	24.26	100.00	11.98	100.00
US Dollar	78.63	100.00	-21.37	25.15	19.48	80.32	9.69	80.92
Euro	6.96	0.00	6.96	26.95	1.41	5.80	0.73	6.12
British Pound Sterling	6.91	0.00	6.91	36.65	1.99	8.19	0.94	7.83
Canadian Dollar	1.20	0.00	1.20	29.85	0.31	1.27	0.15	1.25
Japanese Yen	1.13	0.00	1.13	17.84	0.06	0.25	-0.01	-0.05
Swiss Franc	1.08	0.00	1.08	26.23	0.18	0.75	0.10	0.86
Swedish Krona	0.82	0.00	0.82	32.52	0.20	0.82	0.09	0.78
Australian Dollar	0.59	0.00	0.59	27.45	0.11	0.44	0.01	0.11
Polish Zloty	0.47	0.00	0.47	37.02	0.09	0.38	0.05	0.45
Indian Rupee	0.37	0.00	0.37	35.99	0.07	0.30	0.01	0.09
Chinese Yuan	0.37	0.00	0.37	14.17	0.01	0.06	-0.00	-0.03
Danish Krone	0.33	0.00	0.33	39.54	0.08	0.34	0.05	0.41
Brazilian Real	0.25	0.00	0.25	47.66	0.08	0.31	0.07	0.57
New Israeli Sheqel	0.21	0.00	0.21	35.93	0.05	0.22	0.03	0.25
Norwegian Krone	0.14	0.00	0.14	34.15	0.04	0.15	0.02	0.13



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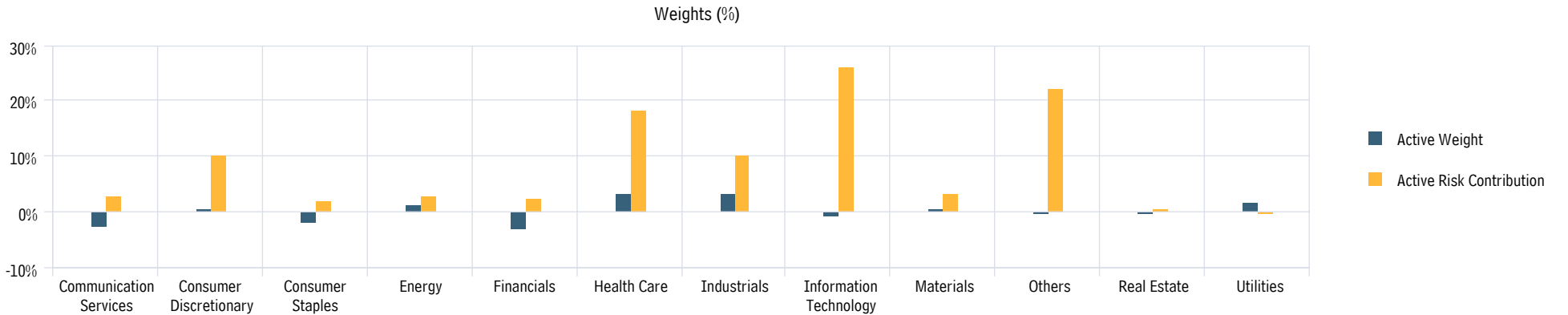
BarraOne Equity Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: Alternative
 BENCHMARK: Alternative
 POSITIONS: 293
 MODEL: BIM303L

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 ACCEPTED: 292

Portfolio Allocation by GICS Sector

GICS Sector	Weight (%)			Total Risk	Active Risk CR	%CR to Active TR	MC to Active TR
	Portfolio	Benchmark	Active				
Total	100.00	100.00	-0.00	24.26	11.98	100.00	0.12
Communication Services	2.65	5.45	-2.80	28.30	0.35	2.90	0.07
Consumer Discretionary	6.41	6.28	0.13	37.13	1.21	10.12	0.13
Consumer Staples	1.36	3.48	-2.12	30.66	0.25	2.06	0.07
Energy	2.60	1.45	1.15	45.55	0.35	2.89	0.16
Financials	2.87	5.84	-2.98	30.29	0.27	2.23	0.10
Health Care	11.27	8.28	2.99	31.88	2.21	18.42	0.13
Industrials	8.06	4.87	3.20	29.09	1.19	9.93	0.14
Information Technology	13.93	14.76	-0.83	35.57	3.13	26.11	0.13
Materials	1.86	1.50	0.36	34.74	0.35	2.92	0.15
Others	44.41	44.44	-0.03	19.48	2.63	21.97	0.02
Real Estate	1.56	2.00	-0.44	24.22	0.06	0.47	0.07
Utilities	3.00	1.64	1.36	10.18	-0.00	-0.03	0.03



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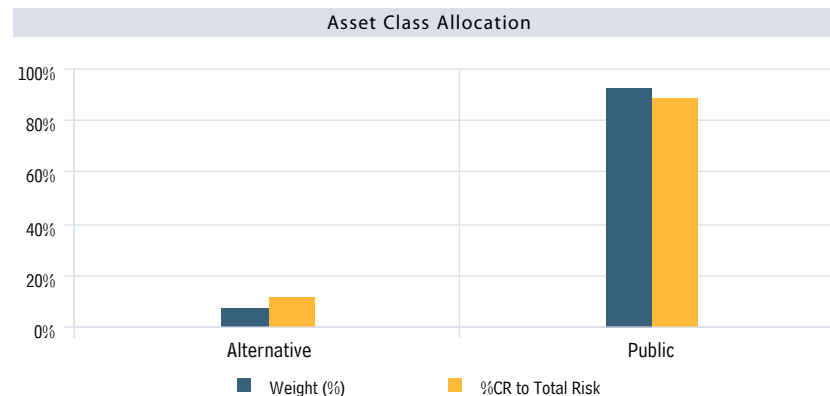
BarraOne Fixed Income Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: FIXED INCOME
 BENCHMARK: Fixed Income
 POSITIONS: 10,133
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 31,718,043,921
 ACCEPTED: 10,060

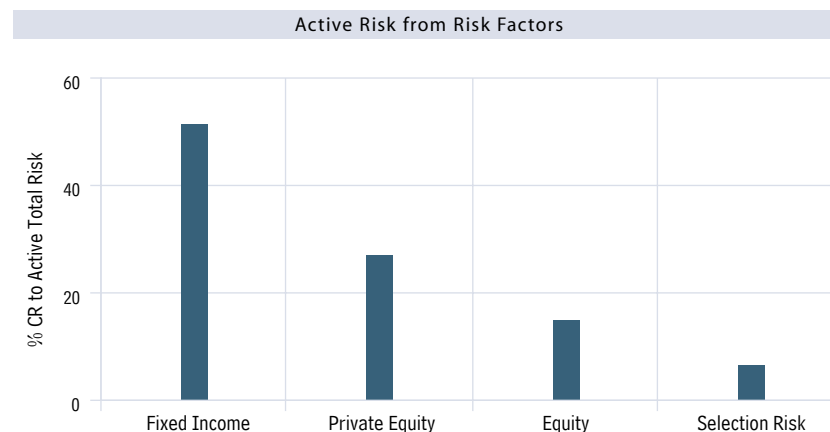
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	5.80	Total	31,718,043,921	100.00	5.80	5.80	100.00
Benchmark Risk	5.87	Alternative	2,384,456,212	7.52	13.45	0.68	11.66
Active Risk	0.71	Public	29,333,587,709	92.48	5.60	5.12	88.34
Portfolio Beta	0.98						
Cont. to Eff. Duration	7.38						
Convexity	0.19						
Yield to Worst (%)	2.67						
OAS to Swap (bp)	166.98						



Risk Factor Breakdown

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	5.80	100.00	1.00	0.71	100.00	1.00
Local Market Risk	5.79	99.78	1.00	0.71	100.01	1.00
Common Factor Risk	5.78	99.62	1.00	0.67	93.49	0.97
Equity	0.16	2.71	0.39	0.11	14.91	0.26
Style	0.05	0.85	0.22	0.06	8.61	0.27
Industry	0.11	1.85	0.41	0.04	6.30	0.17
Fixed Income	5.59	96.47	0.99	0.37	51.55	0.61
Nominal Rates	2.56	44.07	0.52	0.01	1.78	0.10
Real Rates	0.54	9.25	0.80	0.01	0.72	0.20
Credit	2.50	43.16	0.52	0.35	49.05	0.62
Private Equity	0.02	0.41	0.06	0.19	26.97	0.52
Selection Risk	0.01	0.15	0.04	0.05	6.52	0.26
Currency Risk	0.01	0.22	0.31	-0.00	-0.01	-0.00



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BarraOne Fixed Income Summary

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 PORTFOLIO: FIXED INCOME
 BENCHMARK: Fixed Income
 POSITIONS: 10,133
 MODEL: BIM303L

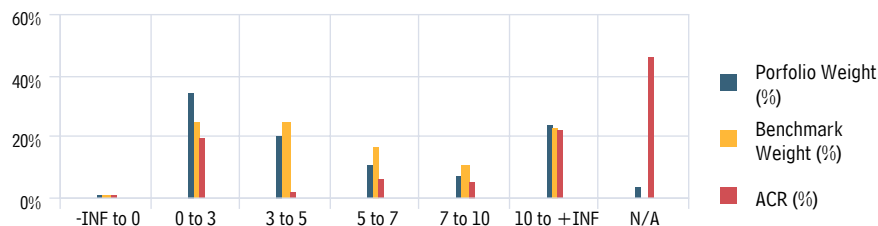
CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 31,718,043,921
 ACCEPTED: 10,060

Portfolio by Factor Breakdowns

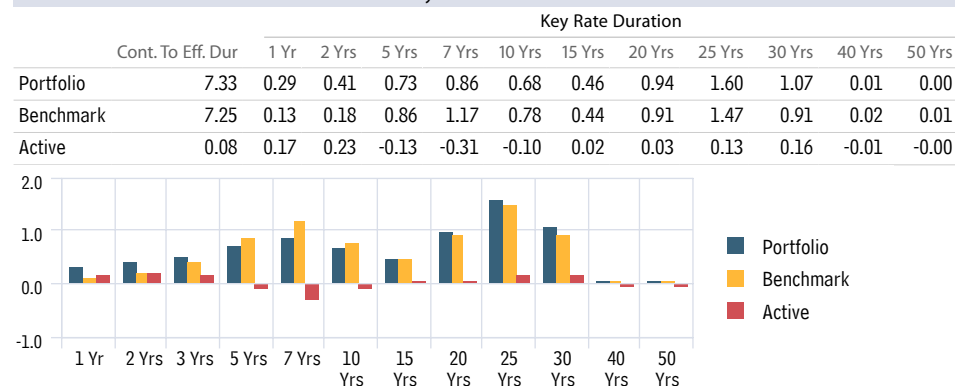
Spread Factor	Top 10 Spread Factor									
	Volatility	Exposure (Residual)				Correlation	Contribution (Residual)			
		Portfolio	Benchmark	Active	MCAR		Active Port	to TR	to AR	to AR%
US Swap Shift	0.24	5.02	2.98	2.04	0.00	0.66	-0.25	0.32	45.48	
US Swap Butterfly	0.10	-1.23	-0.36	-0.87	-0.00	-0.08	0.02	0.01	0.95	
US Consumer Discretionary CCC	7.27	0.03	0.02	0.01	0.01	0.08	0.11	0.01	0.75	
US Sovereign Supranational AA-	0.54	0.00	0.03	-0.03	-0.00	-0.31	0.00	0.01	0.74	
US Conventional 30 yr Mortgage	0.49	0.42	0.52	-0.10	-0.00	-0.08	0.06	0.00	0.50	
US Consumer Staples A	0.96	0.01	0.02	-0.01	-0.00	-0.21	0.01	0.00	0.41	
US Consumer Staples BBB	1.44	0.03	0.05	-0.01	-0.00	-0.14	0.03	0.00	0.40	
US Utilities A	0.94	0.06	0.07	-0.01	-0.00	-0.17	0.03	0.00	0.30	
US Technology A	1.16	0.03	0.04	-0.01	-0.00	-0.21	0.02	0.00	0.27	
US Industrials A	0.94	0.01	0.02	-0.01	-0.00	-0.19	0.01	0.00	0.26	

Term Structure	Top 10 Term Structure									
	Volatility	Exposure (Residual)				Correlation	Contribution (Residual)			
		Portfolio	Benchmark	Active	MCAR		Active Port	to TR	to AR	to AR%
US Butterfly	0.13	1.22	0.22	1.00	0.00	0.16	-0.04	0.02	2.98	
US Twist	0.24	2.61	3.16	-0.56	-0.00	-0.15	0.36	0.02	2.75	
US Inflation-protected	0.83	0.85	0.88	-0.03	-0.00	-0.23	0.56	0.01	0.73	
US Inflation-protected	0.51	0.29	0.35	-0.06	-0.00	-0.05	-0.03	0.00	0.19	
GB Twist	0.24	-0.00	0.00	-0.00	-0.00	-0.13	-0.00	0.00	0.00	
EUR Twist	0.23	-0.00	0.00	-0.00	-0.00	-0.11	-0.00	0.00	0.00	
EUR Implied Volatility	22.46	-0.00	0.00	-0.00	-0.02	-0.07	0.00	0.00	0.00	
EUR Butterfly	0.10	-0.00	0.00	-0.00	-0.00	-0.01	0.00	0.00	0.00	
CA Twist	0.20	-0.00	0.00	-0.00	-0.00	-0.10	-0.00	0.00	0.00	
SE Twist	0.23	-0.00	0.00	-0.00	-0.00	-0.09	-0.00	0.00	0.00	

%CR to Active Risk by Duration Buckets



Key Rate Duration



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BarraOne Fixed Income Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: FIXED INCOME
 BENCHMARK: Fixed Income
 POSITIONS: 10,133
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 31,718,043,921
 ACCEPTED: 10,060

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				
Total	100.00	100.00	0.00	5.80	0.71	100.00	0.01
United States	92.37	91.70	0.66	5.73	0.66	92.73	0.00
Canada	1.37	1.69	-0.32	13.03	0.00	0.62	0.00
United Kingdom	1.26	1.01	0.25	9.38	0.01	1.47	0.00
Ireland	0.88	0.23	0.65	3.45	0.01	0.85	-0.00
Luxembourg	0.55	0.61	-0.06	13.83	0.00	0.42	0.01
Netherlands	0.45	0.58	-0.13	8.39	0.00	0.11	-0.00
Jersey	0.37	0.01	0.36	0.39	0.00	0.43	0.00
N/A	0.36	0.00	0.36	21.95	0.01	1.78	0.03
France	0.29	0.25	0.04	13.38	-0.00	-0.07	-0.01
Germany	0.26	0.33	-0.07	8.69	0.00	0.11	0.00
Mexico	0.20	0.24	-0.03	15.56	-0.00	-0.02	-0.01
Switzerland	0.17	0.15	0.03	14.19	0.00	0.09	-0.01
Israel	0.15	0.04	0.11	6.41	0.00	0.13	-0.00
Caymans	0.15	0.08	0.06	12.70	0.01	0.77	0.04
Japan	0.14	0.33	-0.19	10.54	-0.00	-0.26	-0.01
Spain	0.13	0.07	0.05	8.47	0.00	0.05	-0.01
Indonesia	0.09	0.12	-0.03	13.76	-0.00	-0.03	-0.00
Belgium	0.09	0.15	-0.06	18.64	0.00	0.11	-0.02
Italy	0.09	0.18	-0.10	19.71	0.00	0.34	0.01
Australia	0.08	0.18	-0.10	16.11	-0.00	-0.02	-0.00
Colombia	0.07	0.08	-0.02	16.18	0.00	0.02	-0.01
Chile	0.05	0.04	0.01	11.18	0.00	0.02	-0.01
Norway	0.04	0.07	-0.03	21.09	-0.00	-0.06	-0.02
Greece	0.04	0.00	0.04	26.81	0.00	0.43	0.07
Panama	0.03	0.05	-0.02	10.52	-0.00	-0.01	-0.01
Sweden	0.03	0.08	-0.05	17.09	-0.00	-0.03	0.00
United Arab Emirates	0.03	0.06	-0.03	7.98	-0.00	-0.01	-0.00
Denmark	0.03	0.01	0.02	28.60	0.00	0.35	0.06
New Zealand	0.03	0.03	-0.01	6.60	-0.00	-0.02	0.01
Brazil	0.02	0.06	-0.03	17.75	0.00	0.04	0.00



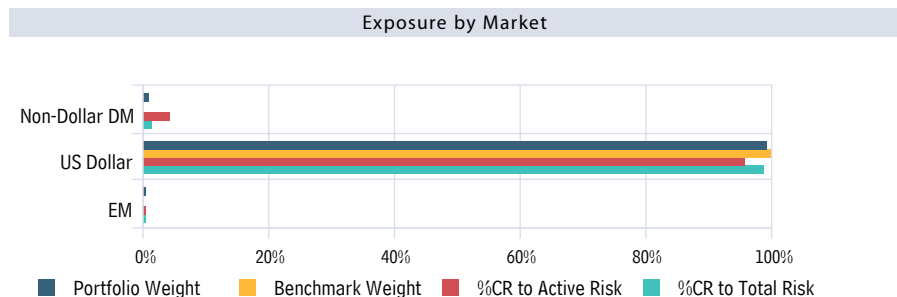
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BarraOne Fixed Income Summary

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 BENCHMARK: Fixed Income
 POSITIONS: 10,133
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 31,718,043,921
 ACCEPTED: 10,060

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	31,447,198,589.42	94.56	98.78	South African Rand	1,289,326.40	0.06	0.01
Euro	195,392,934.34	3.15	0.85	Chinese Yuan	181,804.14	0.00	0.00
British Pound Sterling	47,566,032.77	1.38	0.20	New Taiwan Dollar	52.97	0.00	0.00
Canadian Dollar	11,183,827.62	0.40	0.10	Korean Won	2.07	0.00	0.00
Danish Krone	9,245,833.04	0.37	0.04	Mexican Peso	0.04	0.00	0.00

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						
Total	100.00	100.00	0.00	5.80	5.80	100.00	0.71	100.00	
US Dollar	99.15	100.00	-0.85	5.78	5.73	98.78	0.67	94.56	
Euro	0.62	0.00	0.62	16.23	0.05	0.85	0.02	3.15	
British Pound Sterling	0.15	0.00	0.15	21.16	0.01	0.20	0.01	1.38	
Canadian Dollar	0.04	0.00	0.04	38.42	0.01	0.10	0.00	0.40	
Danish Krone	0.03	0.00	0.03	28.60	0.00	0.04	0.00	0.37	
Swedish Krona	0.01	0.00	0.01	10.93	0.00	0.00	0.00	0.01	
Japanese Yen	0.01	0.00	0.01	21.04	0.00	0.01	0.00	0.02	
Norwegian Krone	0.01	0.00	0.01	72.71	0.00	0.01	0.00	0.04	
South African Rand	0.00	0.00	0.00	35.25	0.00	0.01	0.00	0.06	
Chinese Yuan	0.00	0.00	0.00	20.31	0.00	0.00	0.00	0.00	
Australian Dollar	0.00	0.00	0.00	13.71	0.00	0.00	0.00	0.00	
Singapore Dollar	0.00	0.00	0.00	4.51	0.00	0.00	0.00	0.00	
New Taiwan Dollar	0.00	0.00	0.00	3.56	0.00	0.00	0.00	0.00	
Korean Won	0.00	0.00	0.00	7.95	0.00	0.00	0.00	0.00	
Mexican Peso	0.00	0.00	0.00	17.06	0.00	0.00	0.00	0.00	



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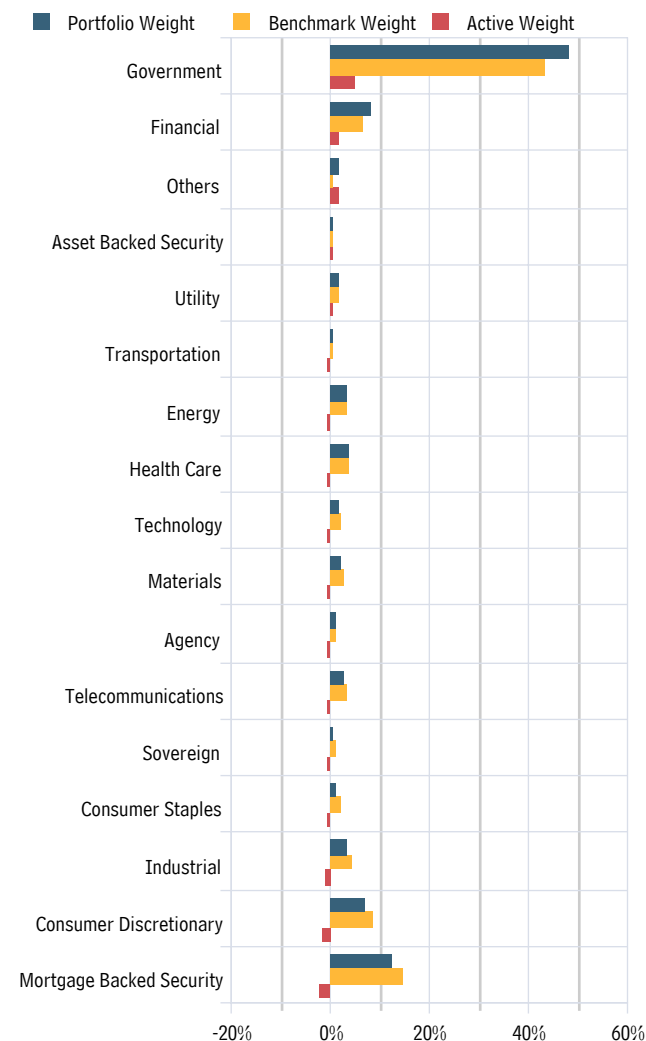
BarraOne Fixed Income Summary

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 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 31,718,043,921
 ACCEPTED: 10,060

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					
Total	100.00	100.00	0.00	7.33	5.80	0.71	100.00	0.01
Government	47.96	42.98	4.99	4.43	6.83	0.12	16.39	-0.01
Mortgage Backed Security	12.32	14.57	-2.25	0.41	3.44	-0.02	-2.21	0.00
Financial	8.17	6.61	1.55	0.34	8.13	0.03	3.97	0.00
Consumer Discretionary	7.14	8.72	-1.58	0.27	11.55	-0.01	-0.80	0.00
Health Care	3.62	3.94	-0.32	0.22	9.86	-0.00	-0.30	-0.01
Energy	3.33	3.36	-0.04	0.19	24.57	-0.00	-0.05	-0.01
Industrial	3.22	4.15	-0.93	0.11	10.51	0.00	0.55	0.00
Telecommunications	2.68	3.27	-0.59	0.12	10.47	0.00	0.44	0.00
Materials	2.13	2.58	-0.45	0.08	14.05	-0.00	-0.15	0.00
Utility	1.71	1.64	0.07	0.12	9.12	0.01	0.92	-0.01
Technology	1.63	1.97	-0.34	0.11	10.67	0.00	0.01	-0.01
Others	1.49	0.01	1.48	0.02	48.40	0.34	47.14	0.03
Consumer Staples	1.33	2.12	-0.79	0.09	10.87	0.00	0.25	-0.01
Agency	0.81	1.34	-0.53	0.07	7.25	-0.00	-0.42	-0.01
Transportation	0.78	0.79	-0.02	0.05	12.66	-0.00	-0.02	-0.01
Asset Backed Security	0.67	0.08	0.59	0.03	8.47	0.04	5.18	0.05
Commercial Mortgage Backed	0.41	0.07	0.34	0.02	6.18	0.01	2.09	0.03
Sovereign	0.40	1.08	-0.68	0.03	9.05	-0.00	-0.25	-0.01
Local/Provincial	0.16	0.23	-0.08	0.01	13.75	0.00	0.52	0.00
Collateralized Loan Obligat	0.04	0.00	0.04	0.61	1,099.46	0.19	26.52	4.36
Collateralized Debt Obligat	0.01	0.00	0.01	0.00	31.75	0.00	0.08	0.08



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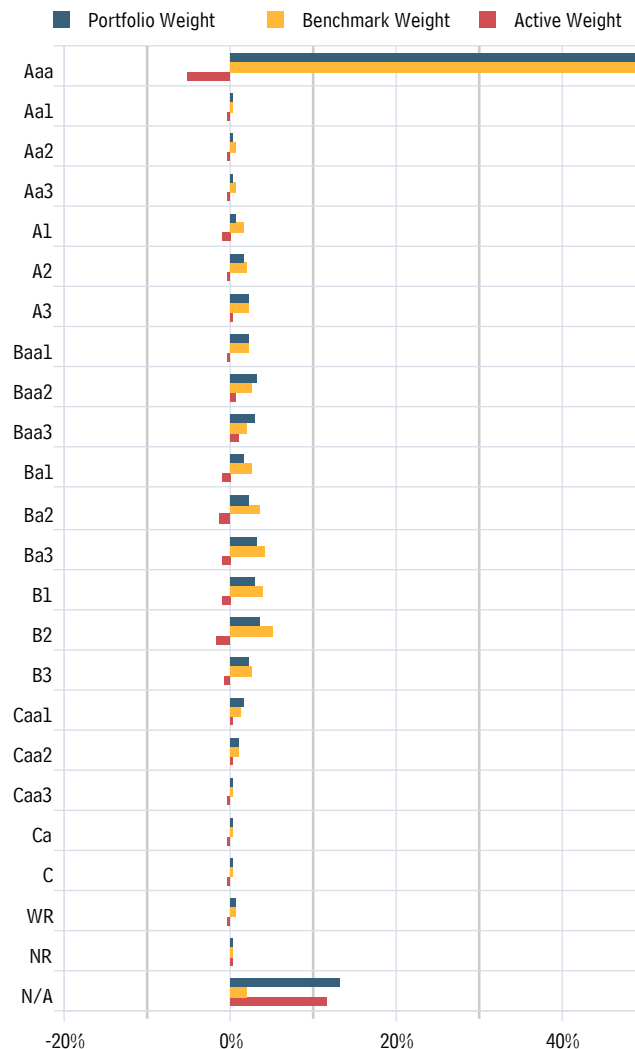
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 MODEL: BIM303L

CURRENCY: USD
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 ACCEPTED: 10,060

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					
Total	100.00	100.00	0.00	7.33	7.40	5.80	0.71	100.00
Aaa	53.43	58.60	-5.17	4.73	9.29	6.37	0.05	6.70
Aa1	0.21	0.32	-0.11	0.02	10.19	10.50	0.00	0.16
Aa2	0.23	0.61	-0.39	0.03	12.94	13.37	-0.00	-0.07
Aa3	0.36	0.56	-0.20	0.04	11.88	12.82	-0.00	-0.37
A1	0.54	1.48	-0.94	0.05	8.99	9.13	0.00	0.35
A2	1.75	1.91	-0.16	0.14	8.21	9.02	0.01	0.82
A3	2.27	2.15	0.11	0.21	9.19	10.56	-0.00	-0.44
Baa1	2.24	2.32	-0.08	0.18	8.18	10.78	0.01	1.23
Baa2	3.30	2.67	0.62	0.26	7.96	10.29	-0.00	-0.37
Baa3	3.01	1.98	1.03	0.17	6.09	9.85	0.00	0.30
Ba1	1.73	2.57	-0.84	0.08	5.45	14.90	-0.01	-1.02
Ba2	2.25	3.48	-1.23	0.08	4.12	12.95	-0.01	-1.12
Ba3	3.26	4.35	-1.10	0.10	3.78	11.05	-0.01	-1.41
B1	3.01	3.91	-0.90	0.09	3.72	14.45	-0.01	-1.28
B2	3.48	5.02	-1.54	0.08	3.19	12.43	-0.02	-2.85
B3	2.17	2.70	-0.53	0.06	3.14	14.10	-0.01	-0.83
Caa1	1.52	1.41	0.11	0.05	3.19	23.32	0.01	1.37
Caa2	1.12	1.10	0.02	0.03	3.03	23.50	0.01	0.85
Caa3	0.22	0.35	-0.14	0.01	2.45	17.45	-0.00	-0.34
Ca	0.11	0.14	-0.03	0.00	2.23	18.60	0.00	0.12
C	0.01	0.02	-0.01	0.00	4.93	14.81	0.00	0.09
WR	0.51	0.51	-0.00	0.01	2.39	7.49	0.01	2.10
NR	0.04	0.03	0.01	0.60	194.38	1,341.02	0.19	26.22
Not Rated	13.26	1.81	11.45	0.30	3.08	5.86	0.50	69.81



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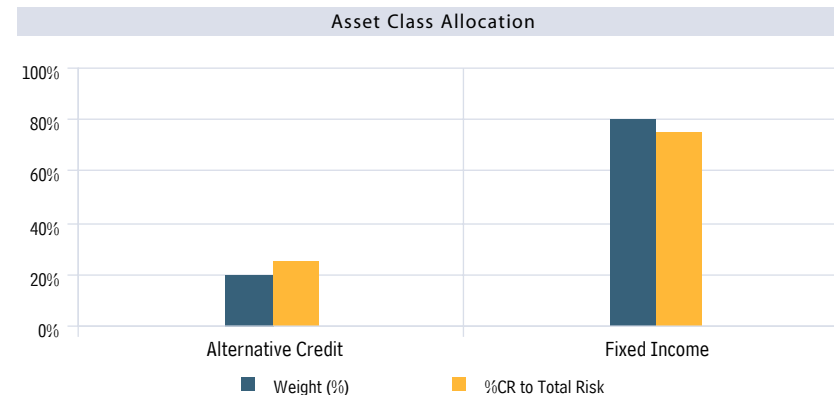
BarraOne Fixed Income Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: Public
 BENCHMARK: Fixed Income
 POSITIONS: 10,113
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 29,333,587,709
 ACCEPTED: 10,040

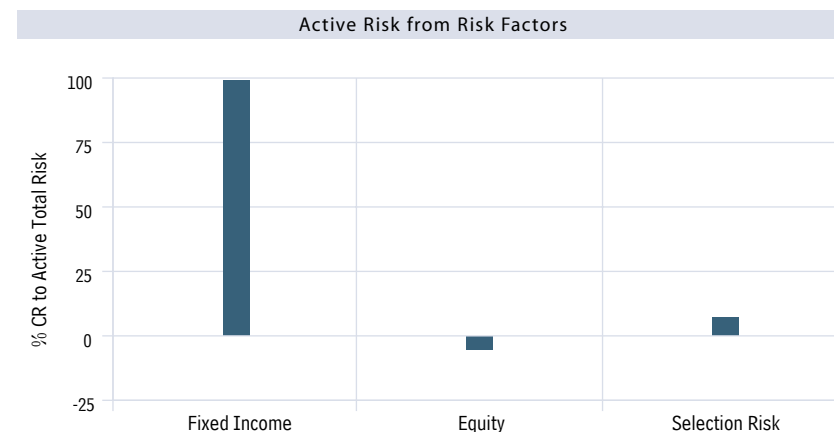
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	5.60	Total	29,333,587,709	100.00	5.60	5.60	100.00
Benchmark Risk	5.87	Alternative Credit	5,691,960,506	19.40	13.18	1.42	25.29
Active Risk	0.55	Fixed Income	23,641,627,203	80.60	5.82	4.18	74.71
Portfolio Beta	0.95						
Cont. to Eff. Duration	7.17						
Convexity	0.82						
Yield to Worst (%)	1.72						
OAS to Swap (bp)	141.09						



Risk Factor Breakdown

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	5.60	100.00	1.00	0.55	100.00	1.00
Local Market Risk	5.60	100.00	1.00	0.55	100.00	1.00
Common Factor Risk	5.59	99.87	1.00	0.51	93.00	0.96
Equity	0.02	0.33	0.36	-0.03	-5.55	-0.62
Style	0.00	0.06	0.26	-0.01	-1.28	-0.60
Industry	0.02	0.27	0.36	-0.02	-4.26	-0.57
Fixed Income	5.57	99.55	1.00	0.54	98.55	0.96
Nominal Rates	2.94	52.59	0.61	0.00	0.70	0.02
Real Rates	0.60	10.80	0.84	-0.02	-4.30	-0.53
Credit	2.02	36.16	0.46	0.56	102.14	0.90
Selection Risk	0.01	0.13	0.04	0.04	7.01	0.26



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BarraOne Fixed Income Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: Public
 BENCHMARK: Fixed Income
 POSITIONS: 10,113
 MODEL: BIM303L

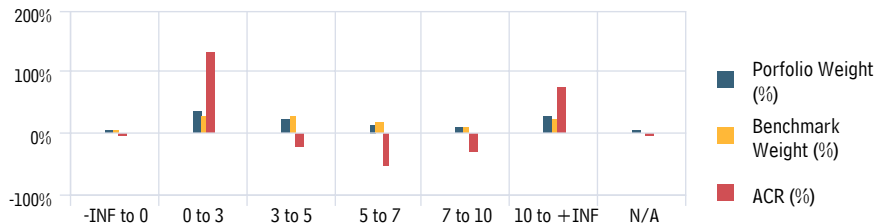
CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 29,333,587,709
 ACCEPTED: 10,040

Portfolio by Factor Breakdowns

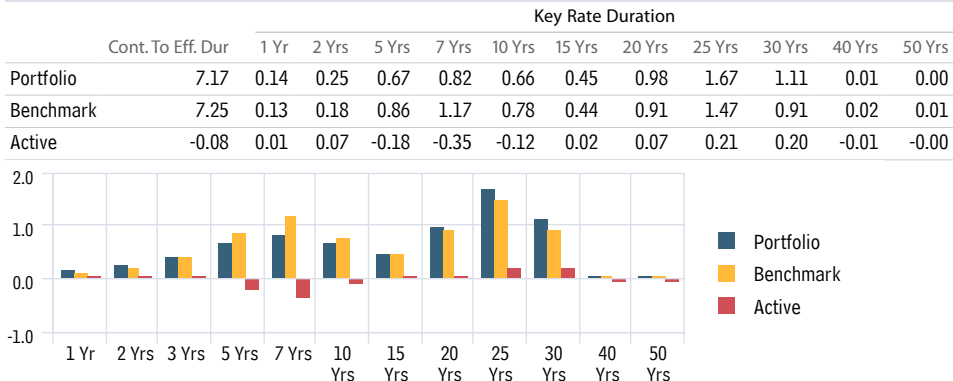
Spread Factor	Volatility	Top 10 Spread Factor				Correlation	Contribution (Residual)			
		Exposure (Residual)					Active Port	to TR	to AR	to AR%
		Portfolio	Benchmark	Active	MCAR					
US Consumer Discretionary B	4.04	0.08	0.11	-0.03	-0.04	-0.87	0.13	0.10	18.28	
US Consumer Discretionary BB	2.83	0.03	0.05	-0.02	-0.02	-0.88	0.04	0.06	10.96	
US Consumer Staples B-BB	2.55	0.04	0.06	-0.02	-0.02	-0.86	0.04	0.05	8.61	
US Energy BB	4.62	0.06	0.07	-0.01	-0.04	-0.85	0.15	0.05	8.30	
US Financials B	4.73	0.03	0.04	-0.01	-0.04	-0.77	0.06	0.04	7.46	
US Materials BB	2.76	0.02	0.04	-0.02	-0.02	-0.87	0.03	0.04	6.96	
US Financials BB	3.46	0.03	0.05	-0.01	-0.03	-0.83	0.06	0.04	6.83	
US Health Care B	3.75	0.02	0.04	-0.01	-0.03	-0.80	0.03	0.03	6.22	
US Telecom BB	2.63	0.04	0.05	-0.01	-0.02	-0.85	0.05	0.03	6.03	
US Industrials CCC	7.48	0.01	0.01	-0.01	-0.06	-0.81	0.02	0.03	5.84	

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 Butterfly	0.13	1.35	0.22	1.13	0.00	0.19	-0.05	0.03	5.15	
US Twist	0.24	3.47	3.16	0.30	0.00	0.06	0.51	0.00	0.77	
US Implied Volatility	26.22	-0.00	-0.00	0.00	0.09	0.35	0.04	0.00	0.38	
US Municipal Twist	0.38	0.01	0.00	0.00	0.00	0.37	0.00	0.00	0.10	
US Municipal Butterfly	0.22	-0.00	-0.00	-0.00	-0.00	-0.08	-0.00	0.00	0.00	
US Inflation-protected	0.19	-0.23	-0.16	-0.07	0.00	0.03	0.01	-0.00	-0.07	
US Municipal Shift	1.32	0.01	0.00	0.00	-0.01	-0.43	0.01	-0.00	-0.40	
US Inflation-protected	0.51	0.31	0.35	-0.03	0.00	0.59	-0.02	-0.01	-1.81	
US Inflation-protected	0.83	0.92	0.88	0.04	-0.00	-0.39	0.62	-0.01	-2.42	
US Shift	0.72	6.24	6.37	-0.13	0.00	0.32	2.43	-0.03	-5.30	

%CR to Active Risk by Duration Buckets



Key Rate Duration



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BarraOne Fixed Income Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: Public
 BENCHMARK: Fixed Income
 POSITIONS: 10,113
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 29,333,587,709
 ACCEPTED: 10,040

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				
Total	100.00	100.00	-0.00	5.60	0.55	100.00	0.01
United States	93.15	91.70	1.45	5.57	0.45	81.33	-0.02
Canada	1.34	1.69	-0.35	12.21	0.02	3.81	-0.10
United Kingdom	1.14	1.01	0.13	8.83	0.01	1.39	-0.07
Ireland	0.93	0.23	0.70	3.18	0.02	3.66	-0.03
Luxembourg	0.49	0.61	-0.11	15.67	0.00	0.40	-0.10
Netherlands	0.40	0.58	-0.18	9.10	0.01	1.16	-0.07
Jersey	0.39	0.01	0.38	0.00	0.01	2.17	-0.00
France	0.27	0.25	0.01	14.21	-0.01	-1.98	-0.10
Germany	0.25	0.33	-0.07	8.57	-0.01	-1.35	-0.04
Mexico	0.22	0.24	-0.02	15.56	0.01	1.43	-0.13
Switzerland	0.16	0.15	0.02	12.79	0.01	1.73	-0.10
Israel	0.15	0.04	0.11	4.71	0.00	0.53	-0.03
Japan	0.15	0.33	-0.18	10.60	-0.00	-0.60	-0.04
Spain	0.13	0.07	0.06	8.52	0.00	0.33	-0.07
Indonesia	0.10	0.12	-0.03	13.84	0.00	0.06	-0.05
Belgium	0.10	0.15	-0.05	18.64	0.00	0.49	-0.09
Caymans	0.08	0.08	-0.00	13.44	0.00	0.04	-0.11
Australia	0.08	0.18	-0.10	16.68	0.00	0.15	-0.08
Colombia	0.07	0.08	-0.01	16.18	0.00	0.34	-0.12
Chile	0.05	0.04	0.01	11.18	0.00	0.07	-0.08
Italy	0.05	0.18	-0.13	19.55	0.01	2.46	-0.14
Norway	0.04	0.07	-0.03	19.72	-0.00	-0.42	-0.05
Panama	0.03	0.05	-0.02	10.52	0.00	0.20	-0.06
United Arab Emirates	0.03	0.06	-0.03	7.40	0.00	0.41	-0.06
New Zealand	0.03	0.03	-0.01	6.60	0.00	0.10	-0.11
India	0.02	0.02	0.00	26.09	-0.00	-0.34	-0.12
Bermuda	0.02	0.04	-0.02	38.72	0.00	0.31	-0.15
Sweden	0.01	0.08	-0.07	2.59	-0.00	-0.08	-0.02
S. Korea	0.01	0.05	-0.04	3.81	-0.00	-0.19	-0.01
Uruguay	0.01	0.03	-0.02	15.08	0.00	0.34	-0.10



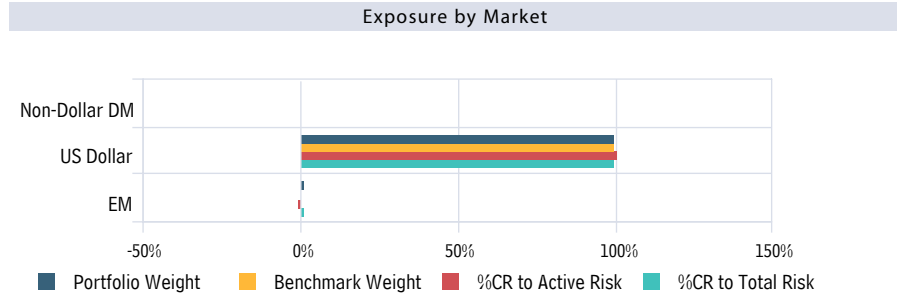
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BarraOne Fixed Income Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: Public
 BENCHMARK: Fixed Income
 POSITIONS: 10,113
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 29,333,587,709
 ACCEPTED: 10,040

Portfolio Allocation by Currency



Developed Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	29,333,587,653.88	100.00	100.00
Swiss Franc	0.00	0.00	0.00
Danish Krone	0.00	0.00	0.00
Euro	0.00	0.00	0.00

Emerging Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
New Taiwan Dollar	52.97	0.00	0.00
Korean Won	2.07	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	Active						
Total	100.00	100.00	-0.00	5.60	5.60	100.00	0.55	100.00	
US Dollar	100.00	100.00	-0.00	5.60	5.60	100.00	0.55	100.00	
New Taiwan Dollar	0.00	0.00	0.00	3.56	0.00	0.00	0.00	0.00	
Korean Won	0.00	0.00	0.00	7.95	0.00	0.00	0.00	0.00	
Swiss Franc	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Danish Krone	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Euro	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	



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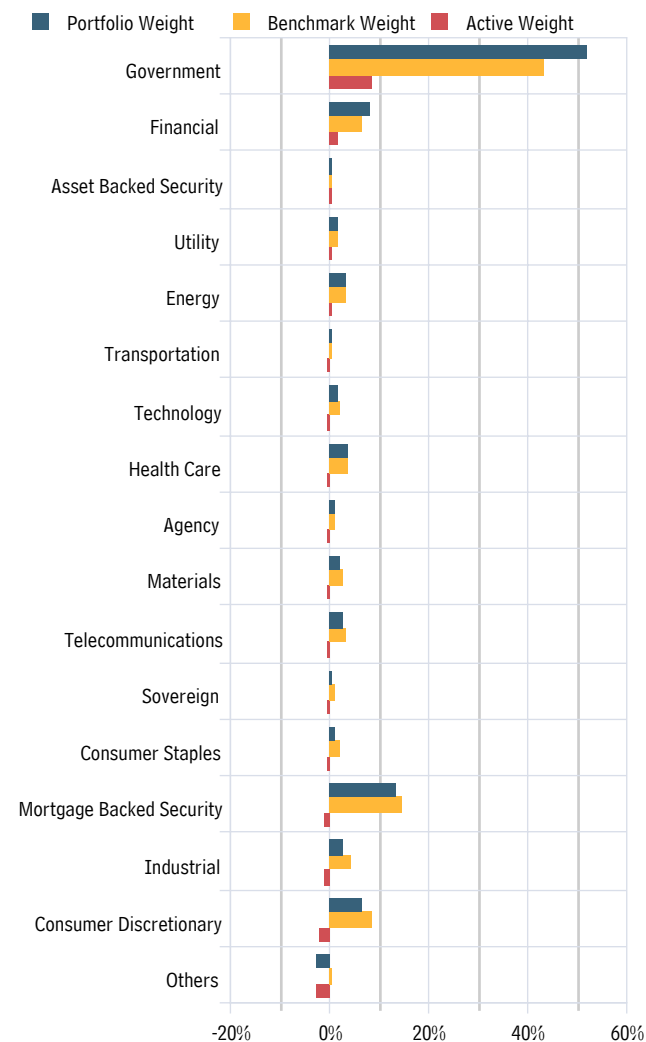
BarraOne Fixed Income Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: Public
 BENCHMARK: Fixed Income
 POSITIONS: 10,113
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 29,333,587,709
 ACCEPTED: 10,040

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					
Total	100.00	100.00	-0.00	7.17	5.60	0.55	100.00	0.01
Government	51.81	42.98	8.83	4.79	6.83	0.29	53.08	0.01
Mortgage Backed Security	13.30	14.57	-1.27	0.45	3.44	-0.03	-5.26	-0.00
Financial	8.21	6.61	1.60	0.35	8.16	0.04	7.36	-0.06
Consumer Discretionary	6.57	8.72	-2.15	0.27	11.67	0.10	17.21	-0.09
Health Care	3.57	3.94	-0.37	0.23	10.10	0.01	1.76	-0.07
Energy	3.43	3.36	0.06	0.20	24.30	0.03	5.50	-0.18
Industrial	2.81	4.15	-1.34	0.11	10.68	0.06	10.62	-0.08
Telecommunications	2.64	3.27	-0.63	0.13	10.88	0.03	5.51	-0.08
Materials	2.09	2.58	-0.49	0.08	14.35	0.01	1.81	-0.11
Utility	1.75	1.64	0.11	0.12	9.40	-0.00	-0.84	-0.06
Technology	1.71	1.97	-0.25	0.12	10.57	-0.01	-2.13	-0.07
Consumer Staples	1.34	2.12	-0.78	0.09	11.14	0.04	7.19	-0.07
Agency	0.88	1.34	-0.46	0.08	7.25	-0.01	-1.20	0.00
Transportation	0.76	0.79	-0.04	0.05	13.27	0.01	1.58	-0.09
Asset Backed Security	0.69	0.08	0.61	0.03	8.39	0.03	6.03	0.02
Sovereign	0.43	1.08	-0.65	0.03	8.95	0.03	6.04	-0.06
Commercial Mortgage Backed	0.41	0.07	0.34	0.02	6.10	0.02	2.92	0.02
Local/Provincial	0.16	0.23	-0.08	0.01	14.18	-0.00	-0.77	-0.02
Others	-2.56	0.01	-2.57	0.00	0.07	-0.08	-14.32	0.00



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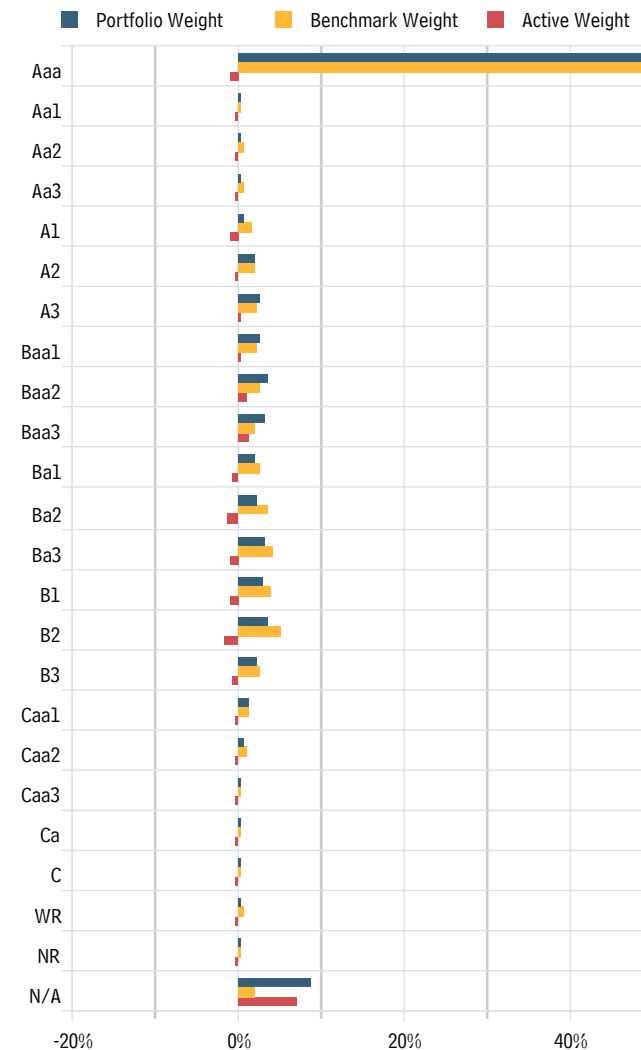
BarraOne Fixed Income Summary

COMPANY: NYCERS - TEACHERS
 PORTFOLIO: Public
 BENCHMARK: Fixed Income
 POSITIONS: 10,113
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 29,333,587,709
 ACCEPTED: 10,040

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					
Total	100.00	100.00	-0.00	7.17	7.55	5.60	0.55	100.00
Aaa	57.75	58.60	-0.85	5.12	9.29	6.38	-0.02	-3.11
Aa1	0.23	0.32	-0.09	0.02	10.20	10.51	-0.00	-0.18
Aa2	0.24	0.61	-0.37	0.03	12.96	13.41	-0.00	-0.87
Aa3	0.39	0.56	-0.17	0.05	11.89	12.84	-0.00	-0.85
A1	0.59	1.48	-0.89	0.05	8.99	9.13	0.01	1.21
A2	1.89	1.91	-0.02	0.15	8.21	9.02	-0.00	-0.75
A3	2.43	2.15	0.28	0.22	9.14	10.55	-0.02	-3.72
Baa1	2.42	2.32	0.10	0.20	8.18	10.78	0.02	2.95
Baa2	3.55	2.67	0.88	0.28	7.96	10.29	-0.02	-3.84
Baa3	3.16	1.98	1.18	0.18	6.09	9.84	-0.01	-1.62
Ba1	1.78	2.57	-0.79	0.08	5.49	15.01	0.05	8.60
Ba2	2.23	3.48	-1.24	0.08	4.12	12.72	0.12	21.60
Ba3	3.37	4.35	-0.98	0.10	3.76	10.94	0.03	5.97
B1	2.95	3.91	-0.95	0.09	3.75	14.45	0.07	11.84
B2	3.41	5.02	-1.61	0.08	3.25	12.73	0.07	12.36
B3	2.16	2.70	-0.55	0.06	3.15	14.37	0.02	3.15
Caa1	1.38	1.41	-0.03	0.05	3.24	24.13	-0.05	-9.43
Caa2	0.75	1.10	-0.35	0.02	2.97	24.69	0.03	6.32
Caa3	0.17	0.35	-0.18	0.00	2.61	20.38	0.02	3.60
Ca	0.03	0.14	-0.11	0.00	2.27	17.86	0.01	1.74
C	0.01	0.02	-0.01	0.00	2.16	9.89	0.00	0.48
WR	0.32	0.51	-0.19	0.01	2.19	6.78	0.00	0.28
NR	0.00	0.03	-0.02	0.00	3.09	5.87	-0.00	-0.15
Not Rated	8.79	1.81	6.98	0.29	3.36	2.32	0.25	44.43



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BarraOne Fixed Income Summary

COMPANY: NYCRS - TEACHERS

POSITIONS: 20
MODEL: BIM303L

Total Plan Summary

Risk Summary

Statistic	Value
Total Risk	13.45
Benchmark Risk	11.86
Active Risk	9.22
Portfolio Beta	0.84
Cont. to Eff. Duration	10.02
Convexity	-9.04
Yield to Worst (%)	10.49
OAS to Swap (bp)	950.85

Asset Class Contribution to Risk

Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total	2,384,456,212	100.00	13.45	13.45	100.00
Opportunistic Fixed Income	2,384,456,212	100.00	13.45	13.45	100.00

Asset Class Allocation

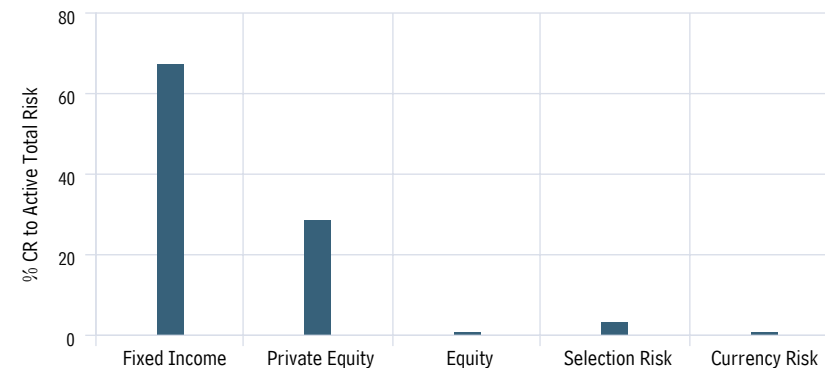


Risk Factor Breakdown

Risk Decomposition

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	13.45	100.00	1.00	9.22	100.00	1.00
Local Market Risk	13.28	98.71	1.00	9.20	99.84	1.00
Common Factor Risk	13.09	97.28	0.99	8.91	96.62	0.98
Equity	3.19	23.69	0.66	0.08	0.86	0.02
Style	1.36	10.09	0.47	0.27	2.90	0.09
Industry	1.83	13.59	0.61	-0.19	-2.04	-0.06
Fixed Income	8.06	59.95	0.86	6.19	67.18	0.69
Nominal Rates	-0.95	-7.09	-0.14	1.81	19.64	0.36
Credit	9.02	67.03	0.80	4.38	47.53	0.62
Private Real Estate	0.03	0.23	0.50	0.00	0.01	0.01
Private Equity	1.81	13.42	0.37	2.63	28.59	0.53
Selection Risk	0.19	1.43	0.12	0.30	3.22	0.18
Currency Risk	0.17	1.29	0.31	0.01	0.16	0.03

Active Risk from Risk Factors



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BarraOne Fixed Income Summary

COMPANY: NYCRS - TEACHERS

CURRENCY: USD

POSITIONS: 20
MODEL: BIM303L

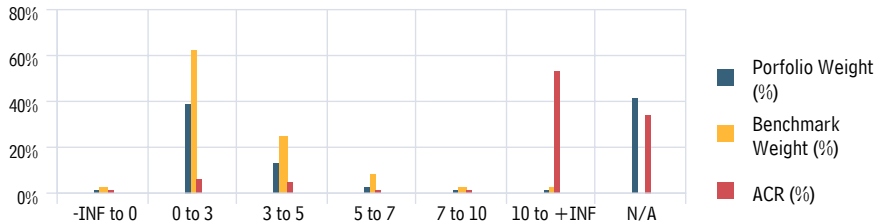
ACCEPTED: 20

Portfolio by Factor Breakdowns

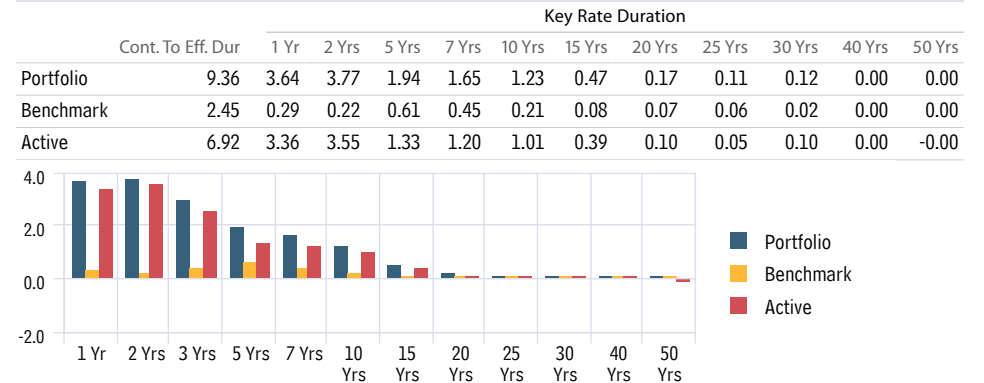
Spread Factor	Volatility	Top 10 Spread Factor								
		Exposure (Residual)				Correlation	Contribution (Residual)			
		Portfolio	Benchmark	Active	MCAR	Active Port	to TR	to AR	to AR%	
US Swap Shift	0.24	29.25	3.14	26.11	0.00	0.55	2.00	3.45	37.48	
US Consumer Discretionary B	4.04	0.22	0.45	-0.23	-0.01	-0.26	0.59	0.24	2.62	
US Energy BB	4.62	0.10	0.22	-0.12	-0.01	-0.24	0.32	0.13	1.40	
US Materials B	5.21	0.05	0.12	-0.07	-0.01	-0.26	0.16	0.10	1.06	
US Industrials B	3.65	0.11	0.20	-0.09	-0.01	-0.29	0.26	0.10	1.05	
US Consumer Discretionary BB	2.83	0.09	0.21	-0.12	-0.01	-0.26	0.18	0.08	0.91	
US Financials B	4.73	0.08	0.17	-0.08	-0.01	-0.20	0.24	0.08	0.87	
US Telecom BB	2.63	0.08	0.19	-0.12	-0.01	-0.25	0.14	0.07	0.81	
US Industrials BB	3.00	0.04	0.13	-0.08	-0.01	-0.28	0.08	0.07	0.77	
US Health Care B	3.75	0.07	0.14	-0.07	-0.01	-0.27	0.15	0.07	0.74	

Term Structure	Volatility	Top 10 Term Structure								
		Exposure (Residual)				Correlation	Contribution (Residual)			
		Portfolio	Benchmark	Active	MCAR	Active Port	to TR	to AR	to AR%	
US Shift	0.72	10.07	2.45	7.61	0.00	0.33	-0.75	1.82	19.77	
EUR Shift	0.52	0.26	0.00	0.26	0.00	0.20	0.00	0.03	0.29	
GB Shift	0.55	0.01	0.00	0.01	0.00	0.18	-0.00	0.00	0.01	
CA Shift	0.63	0.00	0.00	0.00	0.00	0.29	-0.00	0.00	0.00	
EUR Butterfly	0.10	-0.07	0.00	-0.07	-0.00	-0.05	0.00	0.00	0.00	
GB Twist	0.24	-0.01	0.00	-0.01	-0.00	-0.04	-0.00	0.00	0.00	
SE Shift	0.41	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	
ES Shift	0.62	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	
US Municipal Shift	1.32	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	
EUR Implied Volatility	22.46	-0.00	0.00	-0.00	-0.00	-0.02	0.00	0.00	0.00	

%CR to Active Risk by Duration Buckets



Key Rate Duration



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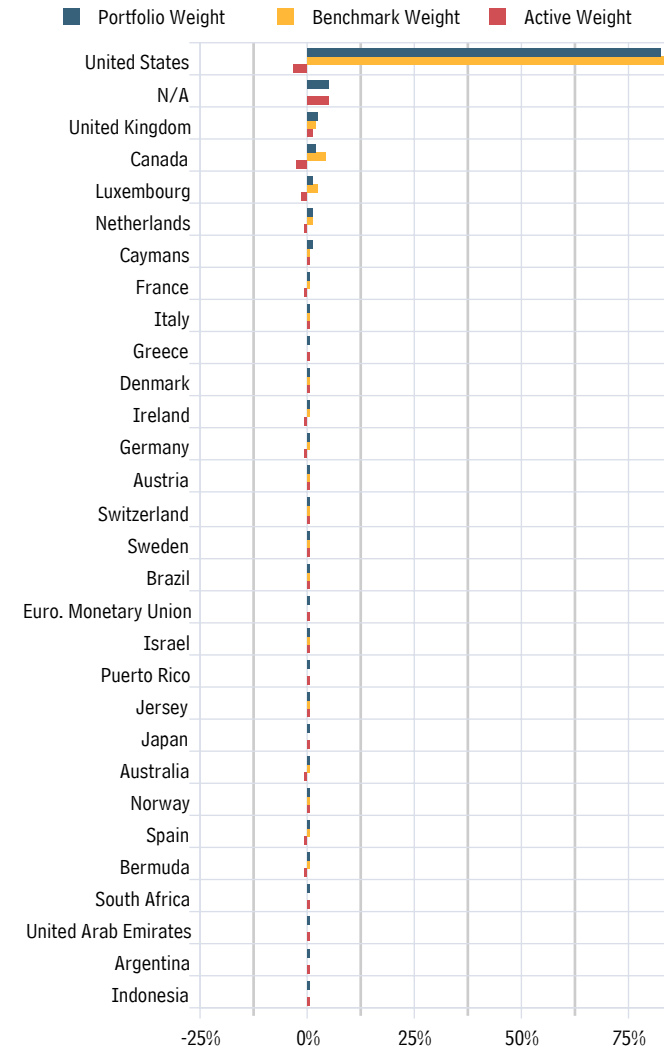
BarraOne Fixed Income Summary

COMPANY: NYCRS - TEACHERS

POSITIONS: 20
MODEL: BIM303L

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				
Total	100.00	100.00	-0.00	13.45	9.22	100.00	0.09
United States	82.72	86.00	-3.28	14.07	8.77	95.16	0.03
N/A	4.84	0.00	4.84	21.95	0.02	0.26	-0.02
United Kingdom	2.76	1.62	1.14	17.32	0.12	1.26	0.00
Canada	1.72	4.10	-2.38	23.46	0.00	0.01	-0.03
Luxembourg	1.28	2.36	-1.08	8.75	0.03	0.29	-0.01
Netherlands	1.08	1.49	-0.41	11.24	0.02	0.18	-0.01
Caymans	0.94	0.30	0.65	18.22	0.08	0.85	0.04
France	0.59	0.61	-0.02	13.49	0.00	0.03	-0.01
Italy	0.54	0.49	0.06	29.47	0.05	0.50	0.02
Greece	0.49	0.00	0.49	26.81	0.03	0.38	0.05
Denmark	0.39	0.03	0.36	28.60	0.04	0.39	0.06
Ireland	0.27	0.53	-0.26	25.73	0.01	0.15	-0.01
Germany	0.26	0.42	-0.15	18.64	0.01	0.09	0.00
Austria	0.26	0.02	0.24	52.34	-0.00	-0.02	-0.03
Switzerland	0.25	0.22	0.04	32.63	0.01	0.06	-0.08
Sweden	0.24	0.07	0.17	29.03	0.00	0.00	-0.02
Brazil	0.21	0.09	0.13	20.45	0.01	0.07	0.00
Euro. Monetary Union	0.18	0.00	0.18	50.59	0.01	0.16	0.01
Israel	0.18	0.02	0.16	26.24	0.00	0.01	-0.01
Puerto Rico	0.17	0.00	0.17	30.86	0.03	0.33	0.16
Jersey	0.12	0.05	0.06	16.92	-0.00	-0.01	0.00
Japan	0.09	0.00	0.09	21.04	0.00	0.05	0.02
Australia	0.07	0.40	-0.32	14.29	-0.00	-0.01	-0.02
Norway	0.07	0.05	0.02	75.08	-0.00	-0.02	-0.03
Spain	0.06	0.06	-0.00	25.74	0.00	0.02	-0.02
Bermuda	0.06	0.06	-0.00	46.99	0.00	0.01	-0.08
South Africa	0.05	0.00	0.05	35.25	0.00	0.05	0.05
United Arab Emirates	0.05	0.00	0.05	14.04	0.00	0.01	0.00
Argentina	0.04	0.00	0.04	46.69	-0.00	-0.02	-0.08
Indonesia	0.01	0.00	0.01	12.81	0.00	0.00	-0.02



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BarraOne Fixed Income Summary

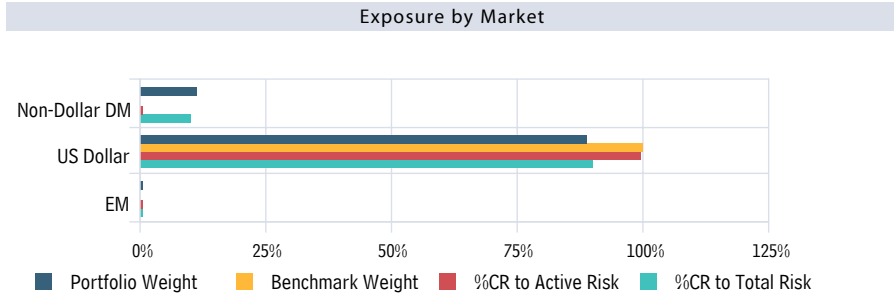
COMPANY: NYCERS - TEACHERS

CURRENCY: USD

POSITIONS: 20
MODEL: BIM303L

ACCEPTED: 20

Portfolio Allocation by Currency



Developed Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	2,113,610,935.53	96.29	90.04
Euro	195,392,934.34	1.97	6.60
British Pound Sterling	47,566,032.77	1.14	1.84
Canadian Dollar	11,183,827.62	0.11	0.85
Danish Krone	9,245,833.04	0.38	0.39

Emerging Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
South African Rand	1,289,326.40	0.05	0.07
Chinese Yuan	181,804.14	0.00	0.01
Mexican Peso	0.04	0.00	0.00

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					
Total	100.00	100.00	-0.00	13.45	13.45	100.00	9.22	100.00
US Dollar	88.64	100.00	-11.36	13.75	12.11	90.04	8.87	96.29
Euro	8.19	0.00	8.19	16.23	0.89	6.60	0.18	1.97
British Pound Sterling	1.99	0.00	1.99	21.16	0.25	1.84	0.10	1.14
Canadian Dollar	0.47	0.00	0.47	38.42	0.11	0.85	0.01	0.11
Danish Krone	0.39	0.00	0.39	28.60	0.05	0.39	0.04	0.38
Swedish Krona	0.09	0.00	0.09	10.93	0.00	0.02	0.00	0.03
Japanese Yen	0.09	0.00	0.09	21.04	0.01	0.06	0.00	0.05
Norwegian Krone	0.07	0.00	0.07	72.71	0.02	0.11	-0.00	-0.01
South African Rand	0.05	0.00	0.05	35.25	0.01	0.07	0.00	0.05
Chinese Yuan	0.01	0.00	0.01	20.31	0.00	0.01	0.00	0.00
Australian Dollar	0.00	0.00	0.00	13.71	0.00	0.00	0.00	0.00
Singapore Dollar	0.00	0.00	0.00	4.51	0.00	0.00	0.00	0.00
Mexican Peso	0.00	0.00	0.00	17.06	0.00	0.00	0.00	0.00
Swiss Franc	-0.00	0.00	-0.00	6.89	-0.00	-0.00	-0.00	-0.00



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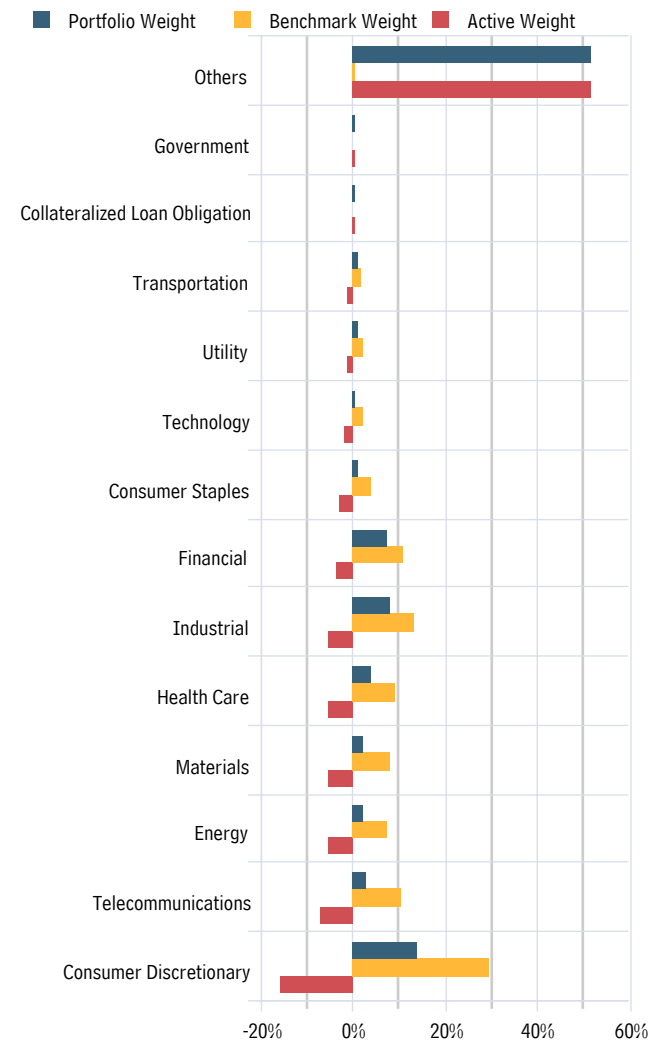
BarraOne Fixed Income Summary

COMPANY: NYCRS - TEACHERS

POSITIONS: 20
MODEL: BIM303L

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					
Total	100.00	100.00	-0.00	9.36	13.45	9.22	100.00	0.09
Others	51.37	0.04	51.33	0.20	18.71	3.56	38.65	0.03
Consumer Discretionary	14.11	29.59	-15.48	0.27	11.57	0.06	0.64	-0.02
Industrial	8.24	13.26	-5.02	0.18	10.93	0.14	1.54	-0.01
Financial	7.67	11.04	-3.37	0.12	14.51	0.27	2.93	-0.00
Health Care	4.24	9.54	-5.30	0.09	8.98	0.04	0.41	-0.02
Telecommunications	3.18	10.26	-7.08	0.08	9.25	0.06	0.65	-0.01
Materials	2.54	7.98	-5.43	0.07	13.11	0.04	0.38	-0.02
Energy	2.08	7.57	-5.50	0.08	31.56	0.19	2.05	-0.06
Utility	1.19	2.24	-1.05	0.08	7.46	0.04	0.48	-0.00
Consumer Staples	1.18	3.95	-2.77	0.03	8.60	0.01	0.08	-0.02
Transportation	1.00	1.88	-0.87	0.02	10.47	0.04	0.48	-0.02
Government	0.67	0.00	0.67	0.01	2.54	0.02	0.24	0.02
Technology	0.60	2.50	-1.89	0.02	20.80	-0.01	-0.10	-0.02
Collateralized Loan Obligat	0.58	0.00	0.58	8.06	1,099.46	4.65	50.47	8.06
Commercial Mortgage Backed	0.44	0.00	0.44	0.02	8.73	0.03	0.35	0.05
Asset Backed Security	0.35	0.01	0.35	0.01	10.84	0.03	0.33	0.07
Mortgage Backed Security	0.26	0.00	0.26	0.01	3.46	0.01	0.11	0.01
Local/Provincial	0.17	0.11	0.06	0.02	29.02	0.02	0.21	0.12
Collateralized Debt Obligat	0.08	0.00	0.08	0.01	31.75	0.01	0.11	0.10
Sovereign	0.03	0.01	0.02	0.00	51.00	-0.00	-0.02	-0.08



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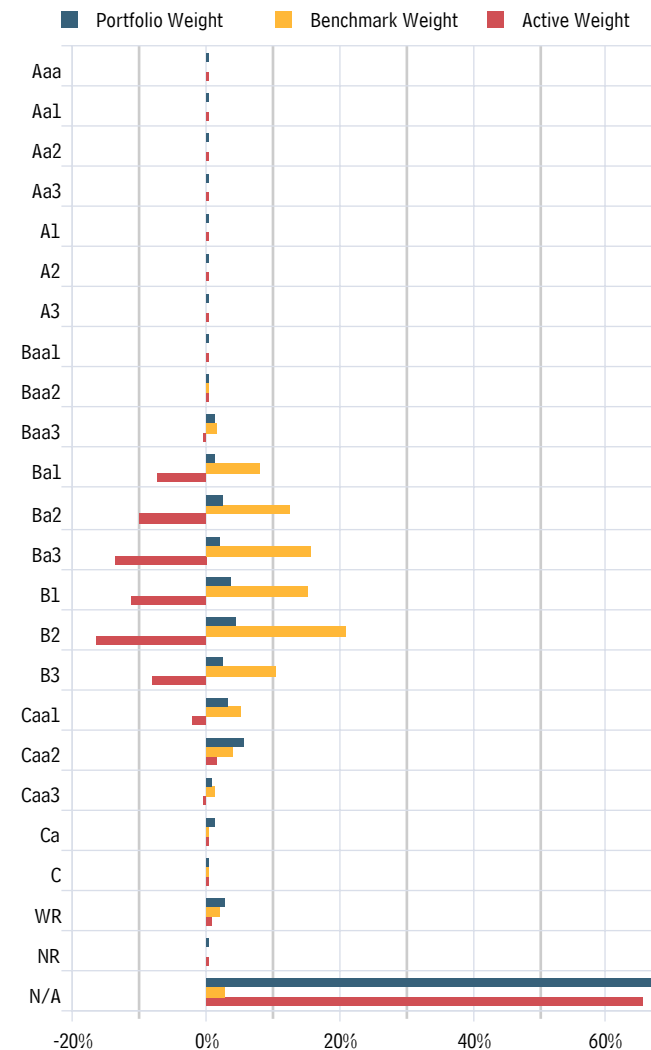
BarraOne Fixed Income Summary

COMPANY: NYCRS - TEACHERS

POSITIONS: 20
MODEL: BIM303L

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					
Total	100.00	100.00	-0.00	9.36	4.26	13.45	9.22	100.00
Aaa	0.29	0.00	0.29	0.00	1.87	5.40	0.01	0.15
Aa1	0.00	0.00	0.00	0.00	4.22	6.59	0.00	0.00
Aa2	0.01	0.00	0.01	0.00	5.38	8.18	0.00	0.01
Aa3	0.01	0.00	0.01	0.00	5.01	7.98	0.00	0.01
A1	0.00	0.00	0.00	0.00	4.72	8.41	0.00	0.00
A2	0.00	0.00	0.00	0.00	3.85	8.99	0.00	0.00
A3	0.27	0.00	0.27	0.04	14.47	18.53	0.01	0.14
Baa1	0.00	0.00	0.00	0.00	3.49	8.63	0.00	0.00
Baa2	0.18	0.06	0.13	0.01	6.83	10.94	0.00	0.04
Baa3	1.20	1.67	-0.48	0.07	5.90	10.78	0.03	0.33
Ba1	1.07	8.18	-7.10	0.05	4.55	15.92	-0.00	-0.03
Ba2	2.42	12.37	-9.95	0.09	4.17	16.31	0.00	0.01
Ba3	1.84	15.59	-13.75	0.06	4.21	14.79	-0.08	-0.85
B1	3.65	15.08	-11.43	0.10	3.37	14.62	0.04	0.44
B2	4.30	20.79	-16.49	0.07	2.57	9.72	0.03	0.31
B3	2.38	10.46	-8.08	0.06	2.97	11.77	0.03	0.36
Caa1	3.23	5.13	-1.90	0.07	2.93	22.55	0.03	0.32
Caa2	5.68	3.94	1.74	0.11	3.11	22.95	-0.05	-0.52
Caa3	0.80	1.30	-0.50	0.02	2.02	15.62	0.01	0.12
Ca	1.03	0.51	0.52	0.01	2.22	20.66	0.01	0.08
C	0.09	0.07	0.02	0.01	7.77	26.84	0.01	0.11
WR	2.89	2.05	0.83	0.08	2.65	9.53	0.14	1.52
NR	0.42	0.00	0.42	8.04	217.00	1,499.05	4.62	50.09
Not Rated	68.23	2.79	65.44	0.50	1.98	14.66	4.37	47.37



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APPENDICES:

Basket Limit	25.00%
Basket Consumed	21.74%
Remaining Capacity	3.26%

	Basket-Eligible Assets*			Basket Assets	Total
	Non-Basket Assets	Non-Contributing	Contributing		
FIXED INCOME	30.59%	4.46%	0.01%	5.79%	40.85%
U.S. Fixed	7.92%	3.55%	0.01%	5.62%	17.10%
Cash/Equivalent	2.31%	---	---	0.00%	2.31%
TIPS	3.81%	---	---	---	3.81%
Convertible Bonds	0.00%	---	---	---	0.00%
OFI	0.03%	0.12%	0.00%	2.74%	2.89%
High Yield	0.56%	3.39%	0.00%	0.95%	4.91%
Bank Loans	0.07%	0.02%	---	1.90%	1.99%
ETI Investments	0.82%	---	---	0.02%	0.84%
Core/Core Plus	0.32%	0.02%	---	0.01%	0.35%
U.S. Structured	22.67%	0.91%	---	0.18%	23.75%
Credit	4.72%	0.91%	---	0.07%	5.70%
Mortgages	6.24%	---	---	0.11%	6.35%
ST Treasury	3.54%	---	---	---	3.54%
Treasury/Agency	3.24%	---	---	---	3.24%
MT Treasury	0.01%	---	---	---	0.01%
LT Treasury	4.92%	---	---	---	4.92%
EQUITY	28.26%	14.94%	10.74%	5.20%	59.15%
Public Equity	28.23%	9.99%	10.74%	0.05%	49.01%
U.S. Equity	26.35%	0.46%	0.50%	0.00%	27.31%
EAFE	0.19%	4.93%	5.30%	0.03%	10.45%
Emerging Markets	0.20%	4.53%	4.87%	0.02%	9.61%
Global	0.22%	0.07%	0.07%	0.00%	0.36%
Real Estate Equity	1.27%	0.00%	0.00%	---	1.28%
Alternative Investments	0.04%	4.95%	---	5.16%	10.14%
Infrastructure	0.00%	1.20%	---	---	1.20%
Private RE/Core	0.00%	2.37%	---	0.01%	2.38%
Private RE/Non-Core	0.01%	1.38%	---	0.00%	1.39%
Private Equity	0.03%	---	---	5.15%	5.18%
TOTAL ASSETS	58.86%	19.40%	10.75%	11.00%	100.00%
	Non-Basket:	78.26%	Basket:	21.74%	

*Basket amounts are estimates



AUM as of June 30, 2020

	Current MV	Liquid Assets		
		Today	1 Year	2 Years
PUBLIC EQUITY	\$40,721	\$40,721	\$40,721	\$40,721
U.S.	23,716	23,716	23,716	23,716
EAFE Equity	8,174	8,174	8,174	8,174
Emerging Markets	8,535	8,535	8,535	8,535
Global Equity	296	296	296	296
PUBLIC FIXED INCOME	\$29,711	\$29,326	\$29,660	\$29,660
Short Term Securities	1,293	1,293	1,293	1,293
U.S. Government	9,700	9,700	9,700	9,700
Long Duration Treasury	0	0	0	0
Mortgages				
Core Mortgages	4,199	4,199	4,199	4,199
ETI	698	313	647	647
Credit - Investment Grade	4,973	4,973	4,973	4,973
Corporate - High Yield	4,024	4,024	4,024	4,024
Corporate - Bank Loans	1,664	1,664	1,664	1,664
UST - Inflation Protected	3,159	3,159	3,159	3,159
ALTERNATIVE ASSETS	\$10,799	\$1,788	\$2,384	\$2,384
Private Equity	4,294	0	0	0
Private Real Estate	3,125	0	0	0
Infrastructure	995	0	0	0
Opportunistic Fixed Income	2,384	1,788	2,384	2,384
Total Assets	\$81,231	\$71,835	\$72,765	\$72,765
Total Illiquid \$		\$9,396	\$8,466	\$8,466
Total Illiquid %		11.6%	10.4%	10.4%
Unfunded OFI Commitments	\$368			
Unfunded INF Commitments	\$812			
Unfunded PE Commitments	\$3,441			
Unfunded RE Commitments	\$2,212			
Total commitments \$	\$6,833			
Total commitments %	8.4%			



TRS Liquidity Profile - Static Analysis

AUM as of June 30, 2020

Denominator Effect - Decrease AUM by One-Third

Total Illiquid \$	\$9,396	\$8,466	\$8,466
Total Illiquid %	17.4%	15.6%	15.6%

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
Total Assets	\$81,231	\$71,835	\$72,765	\$72,765

Private Equity, Real Estate, Infrastructure and Opportunistic Fixed Income Stress case

Unfunded OFI Commitments		\$74	\$147
Unfunded INF Commitments		\$162	\$325
Unfunded PE Commitments Drawn		\$688	\$1,376
Unfunded RE Commitments Drawn		\$442	\$885
Total commitments \$		\$1,367	\$2,733
Total commitments %		1.7%	3.4%

Total Illiquid \$		\$9,832	\$11,199
Total Illiquid %		12.1%	13.8%

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

Total Illiquid \$	\$9,396	\$9,832	\$11,199
Total Illiquid %	17.4%	18.2%	20.7%

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

