








Common Investment Meeting (BERS)



BERS

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

Agenda

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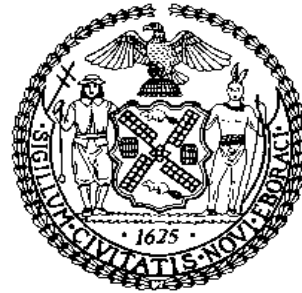
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PUBLIC SESSION:

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

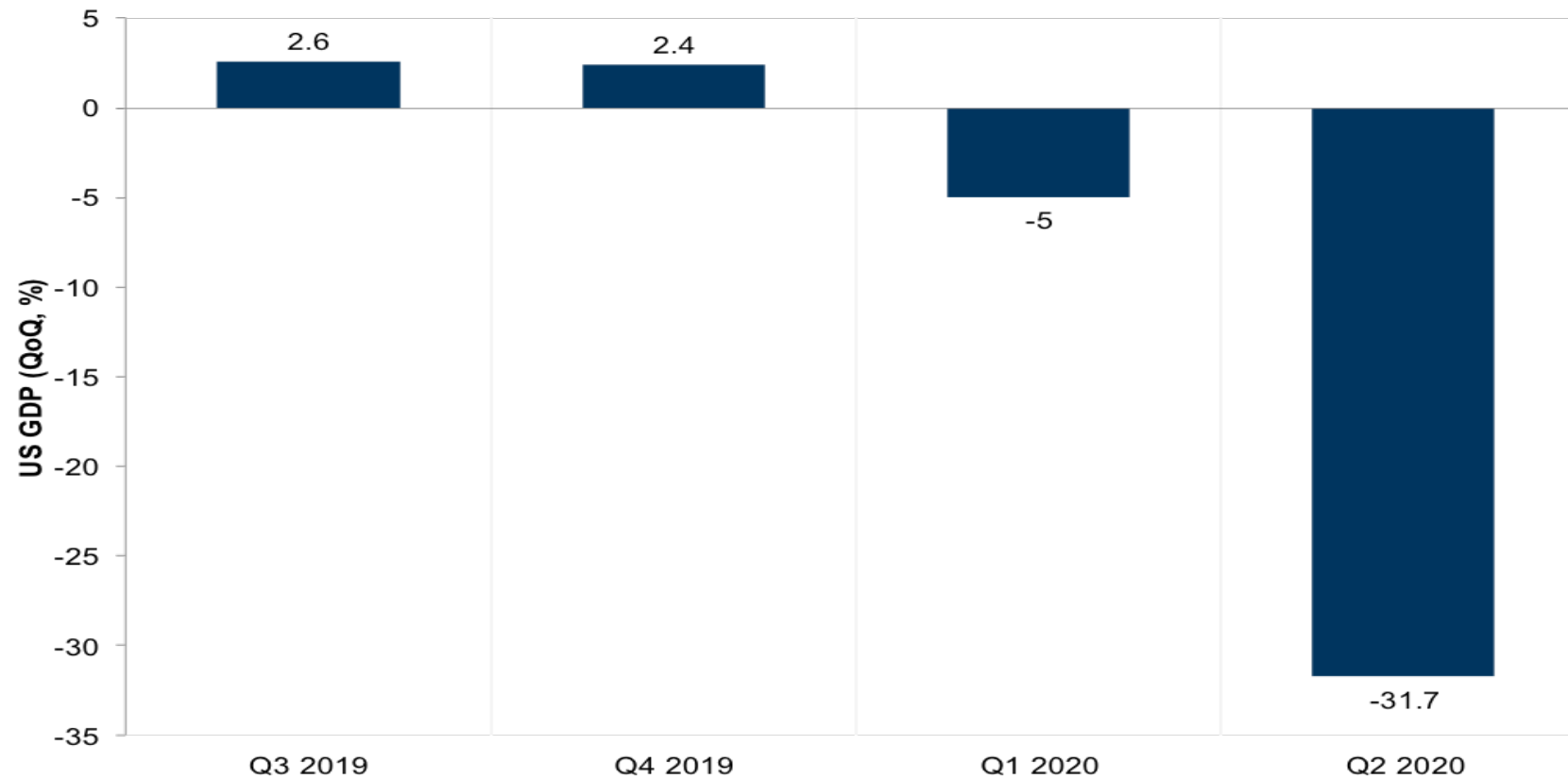
Source: State Street



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

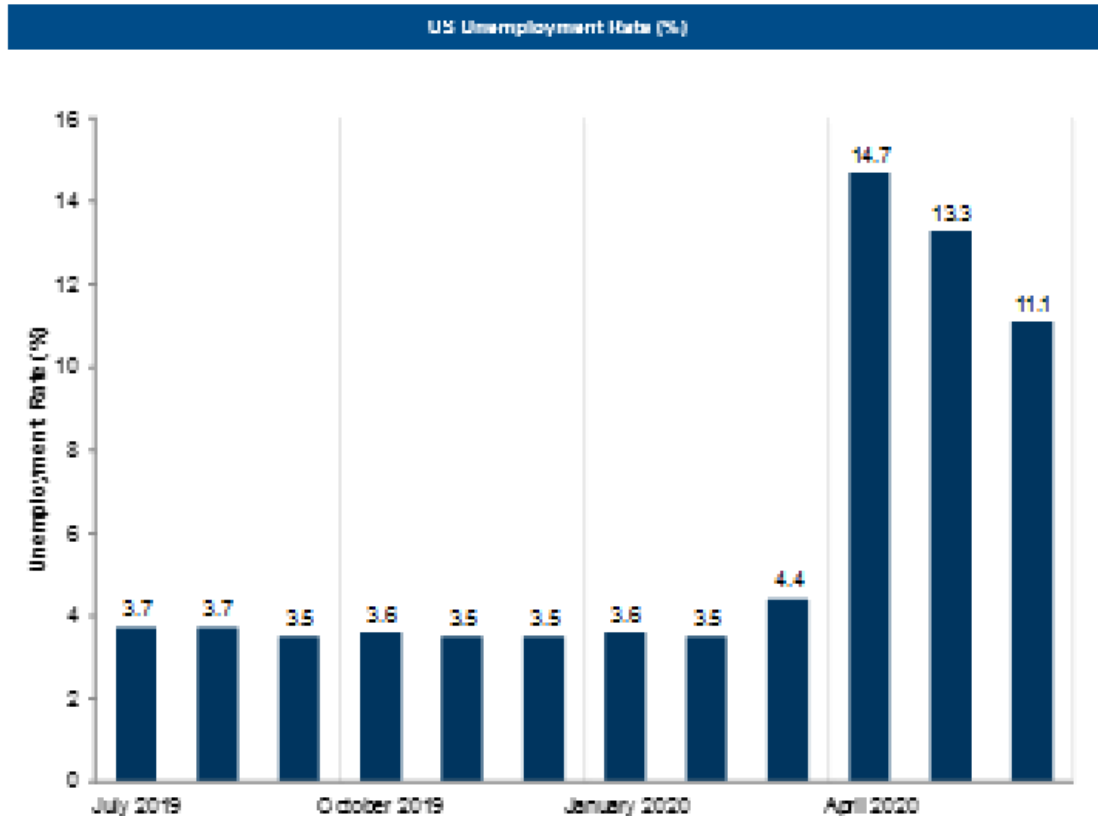


Source GSAM



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



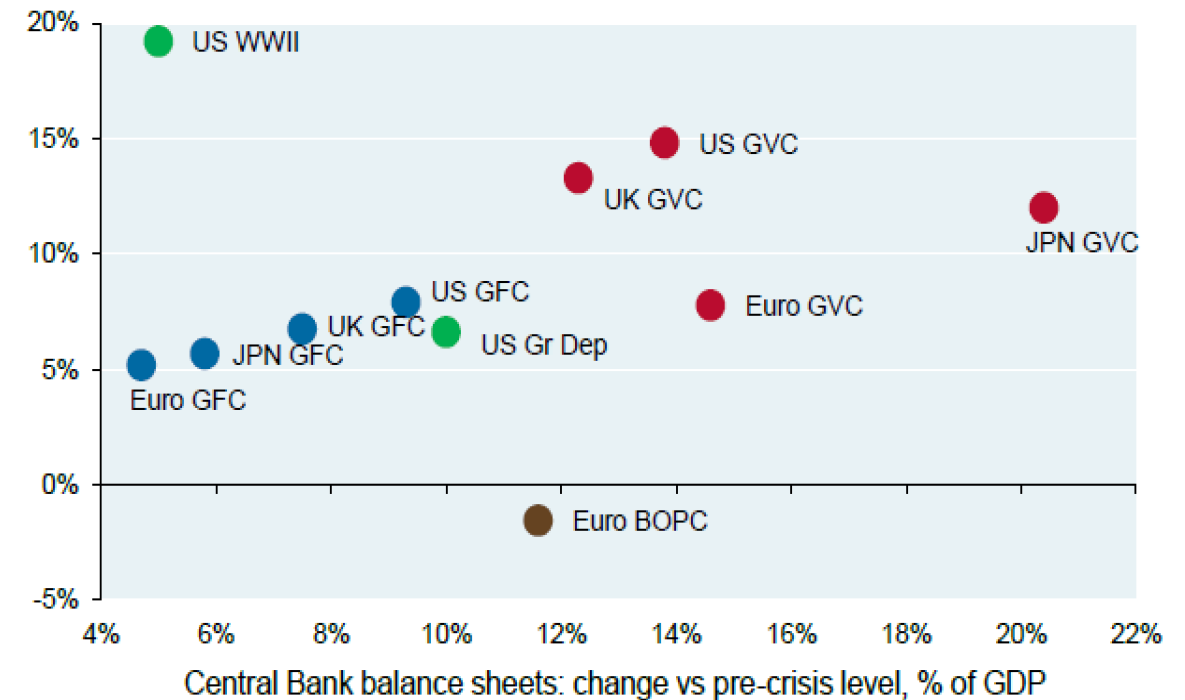
Market Returns: Q2-2020

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.

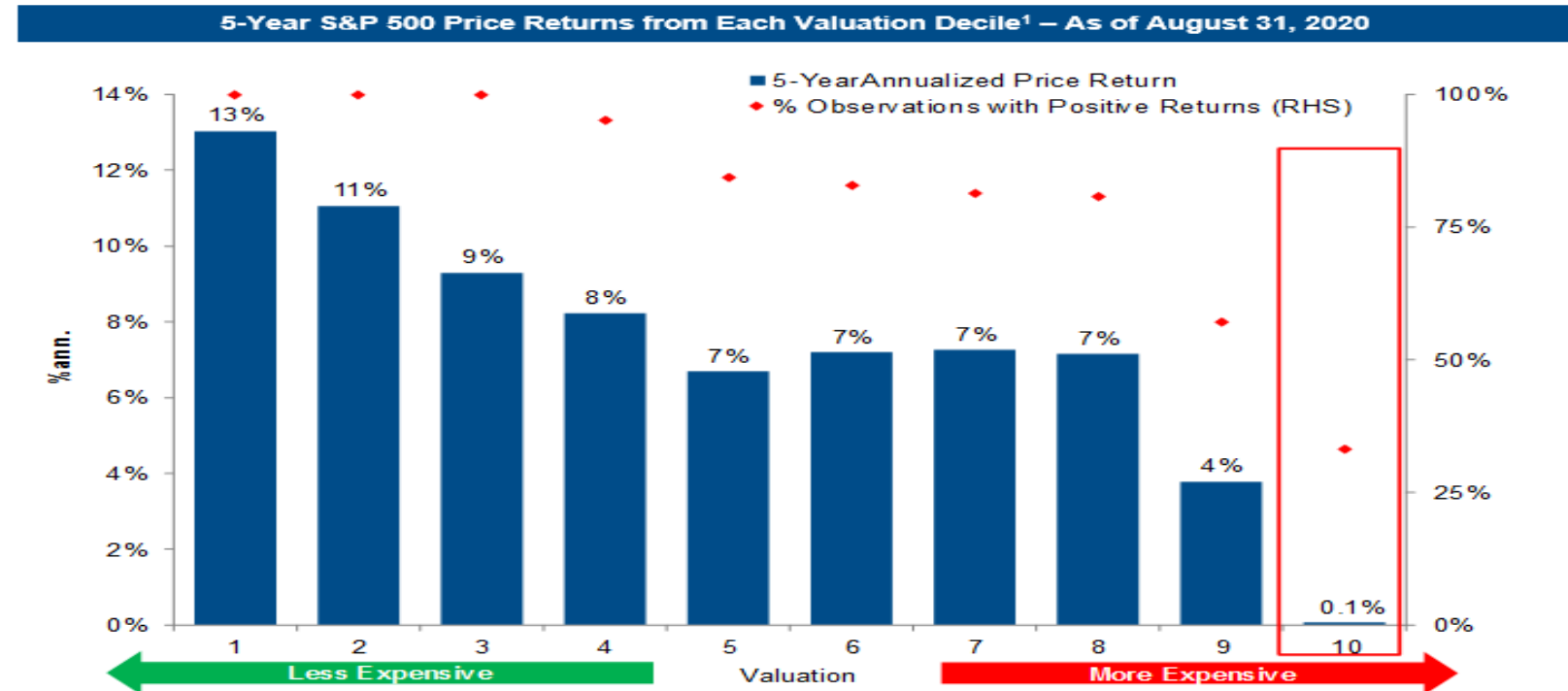


Global Macro Issues

- **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



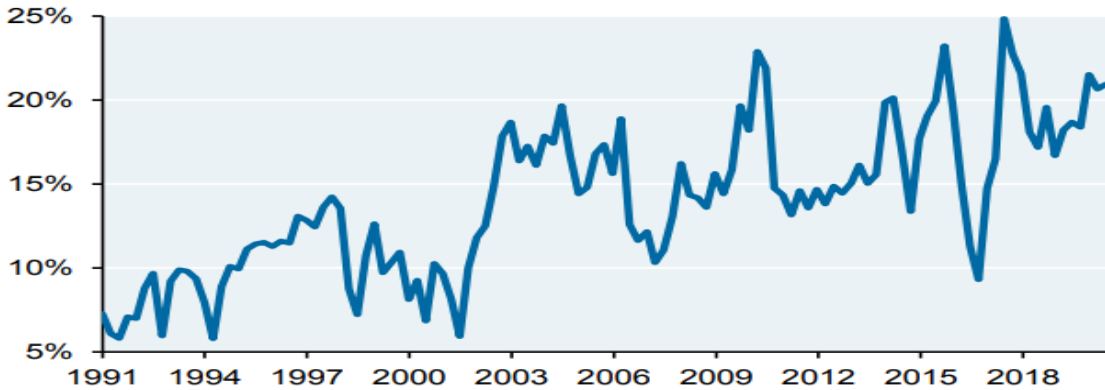
Source: Bloomberg, J.P. Morgan. September 04, 2020.

Contribution of top firms to overall US market cap



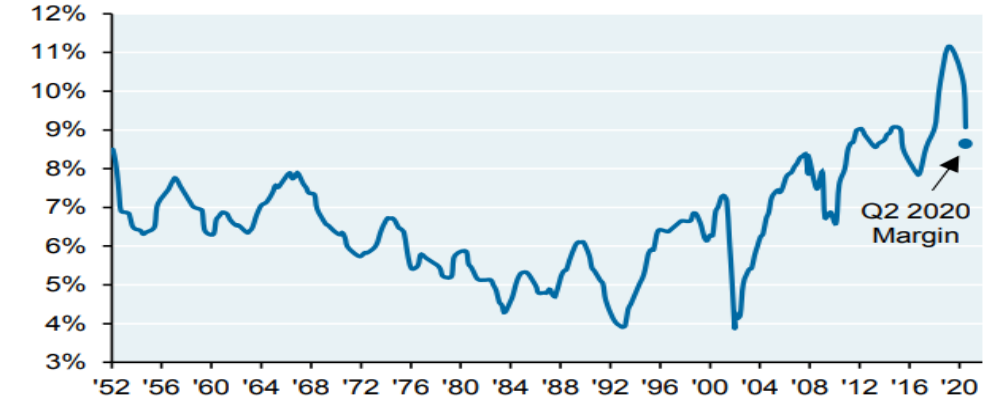
Source: Bloomberg. September 4, 2020.

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

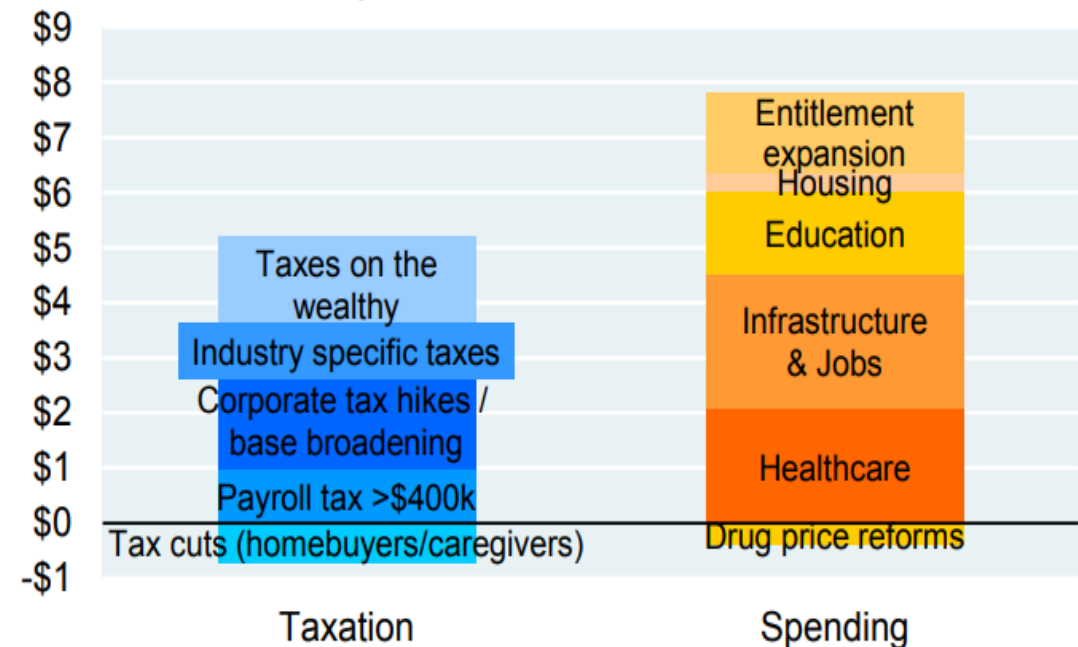
- Democrats hold house and win majority in Senate
- Tax policy: Raise \$4T-\$5T in revenue over 10-years, both increases in corporate and individual taxes
- Spending policy: Massive expenditures on Environment (clean energy), Healthcare (create Medicare option, expand Obamacare), Labor Relations (policies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



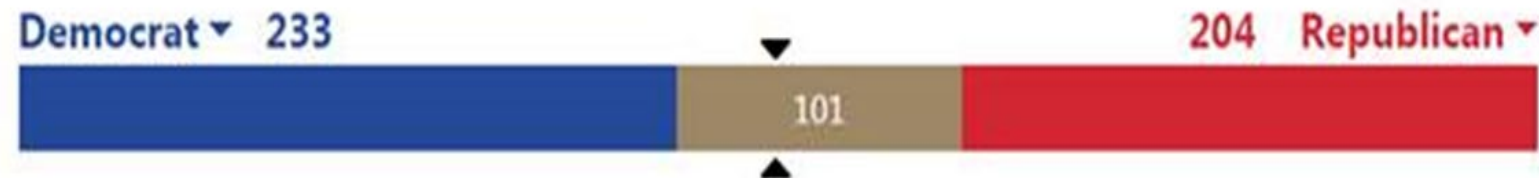
Global Macro Issues

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

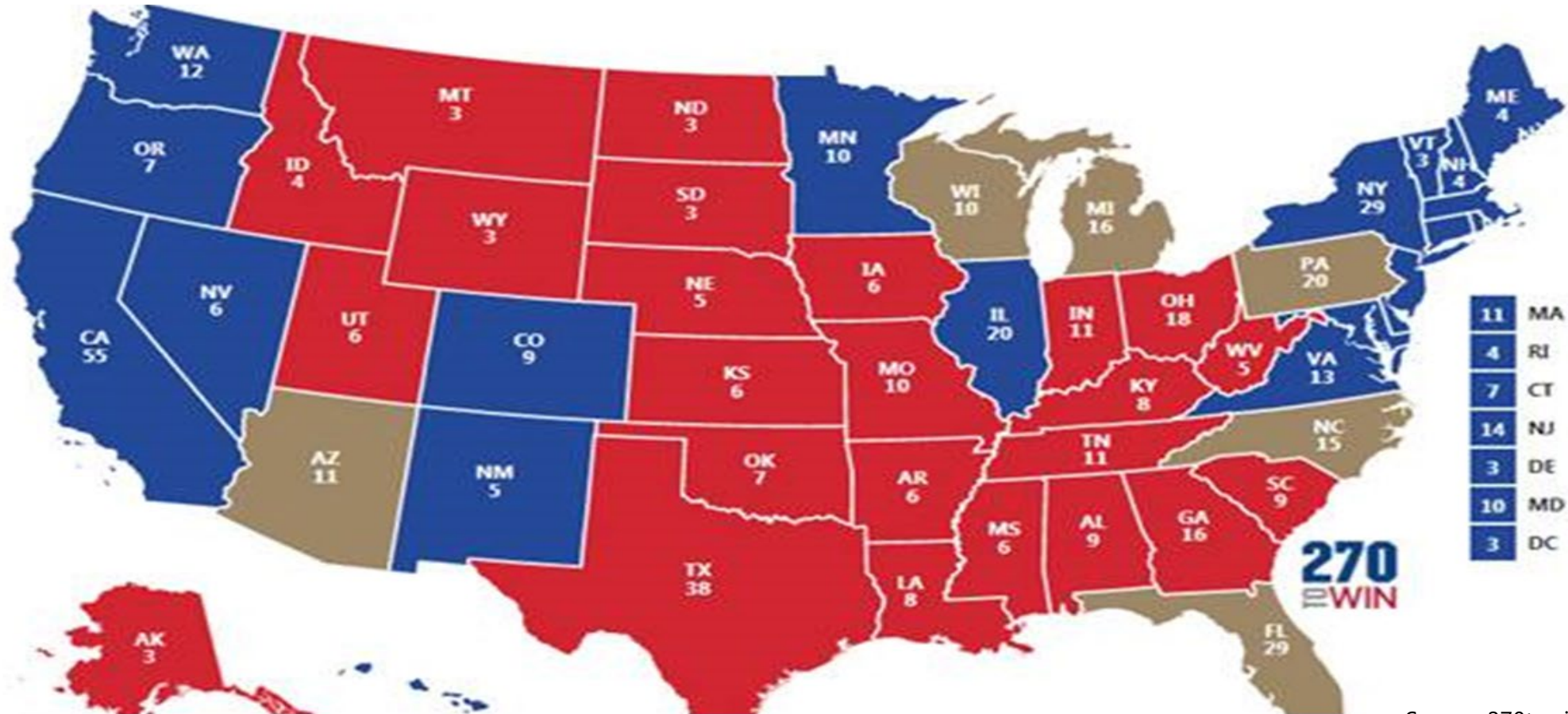
• 20 votes

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

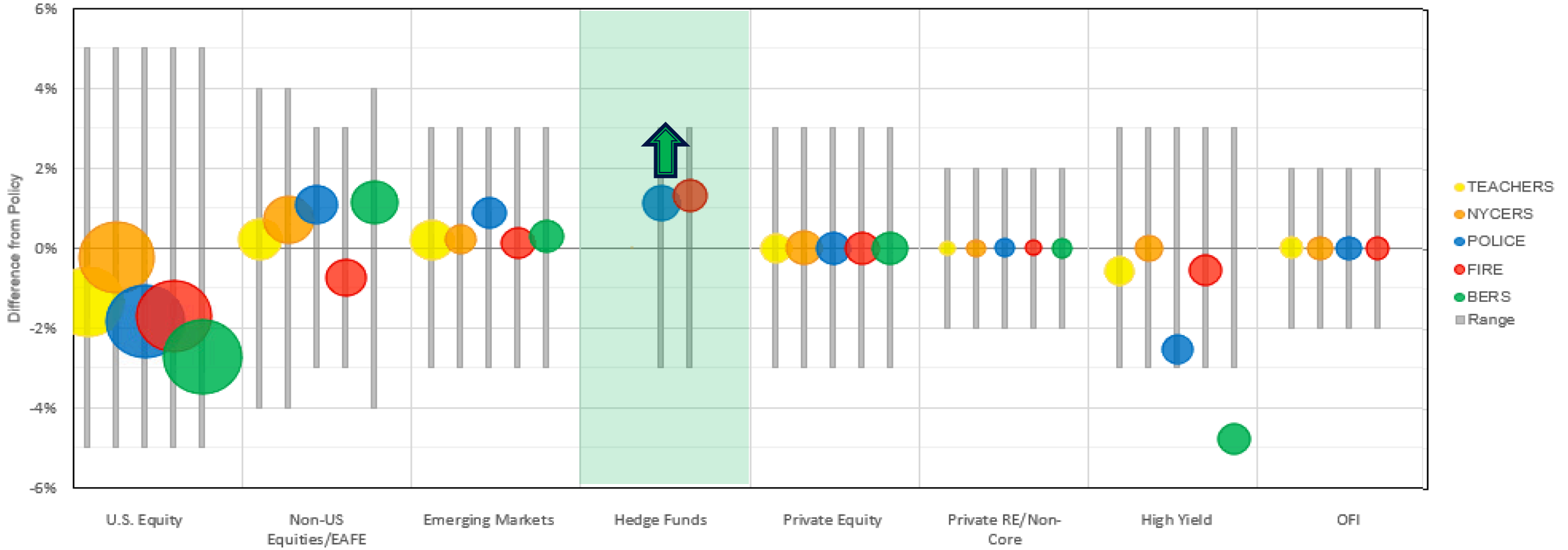
	From	Amount (\$M)	To	Amount (\$M)
TRS	Equity	350	Cash Desk	570
	Short Duration	100	Equity	450
	LI Duration	1,295	IG Credit	835
	TIPS	380	Mortgage	270
NYCERS	Equity	200	Cash Desk	760
	LI Duration	1,560	IG Credit	560
	TIPS	500	Mortgage	940
POLICE	LI Duration	1,425	Cash Desk	650
	Long Duration	125	Equity	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

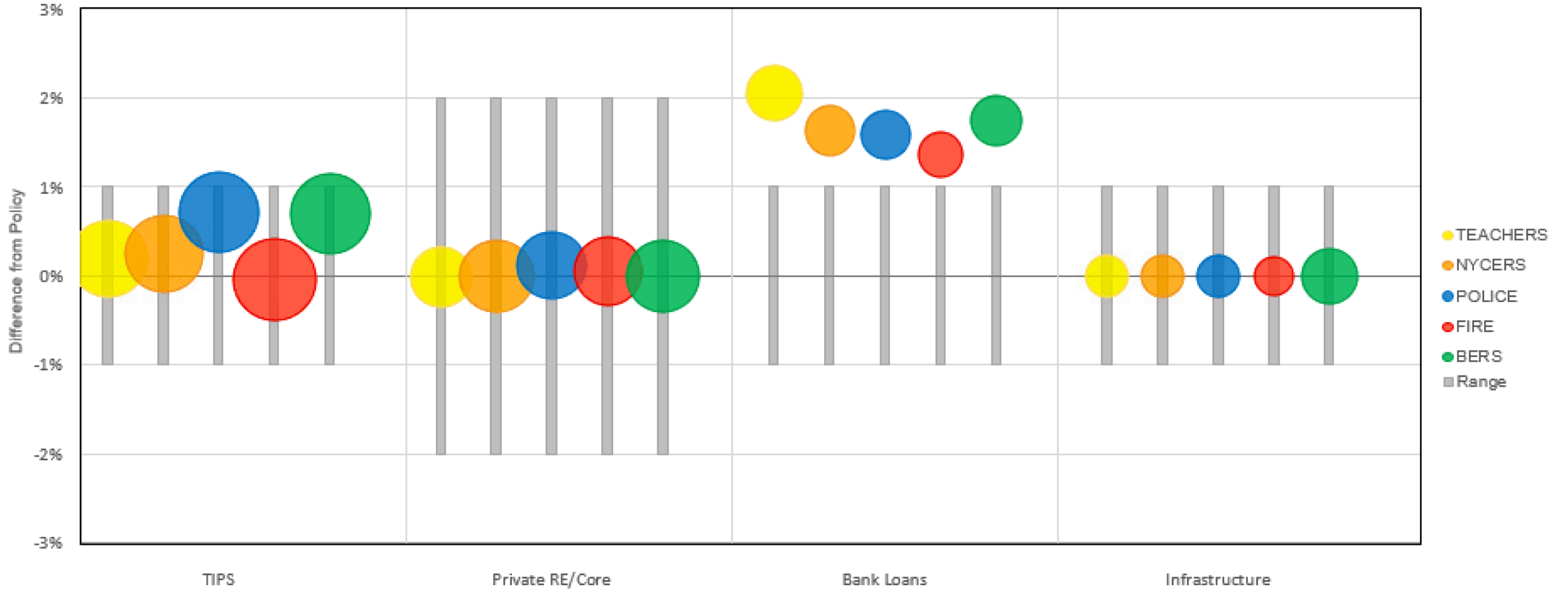


Source: State Street

Q2 – Asset Allocation Review – Inflation Protection

Relative Mix to Adjusted New Policy Weights

Policy vs Actual Asset Allocation - Inflation Protection

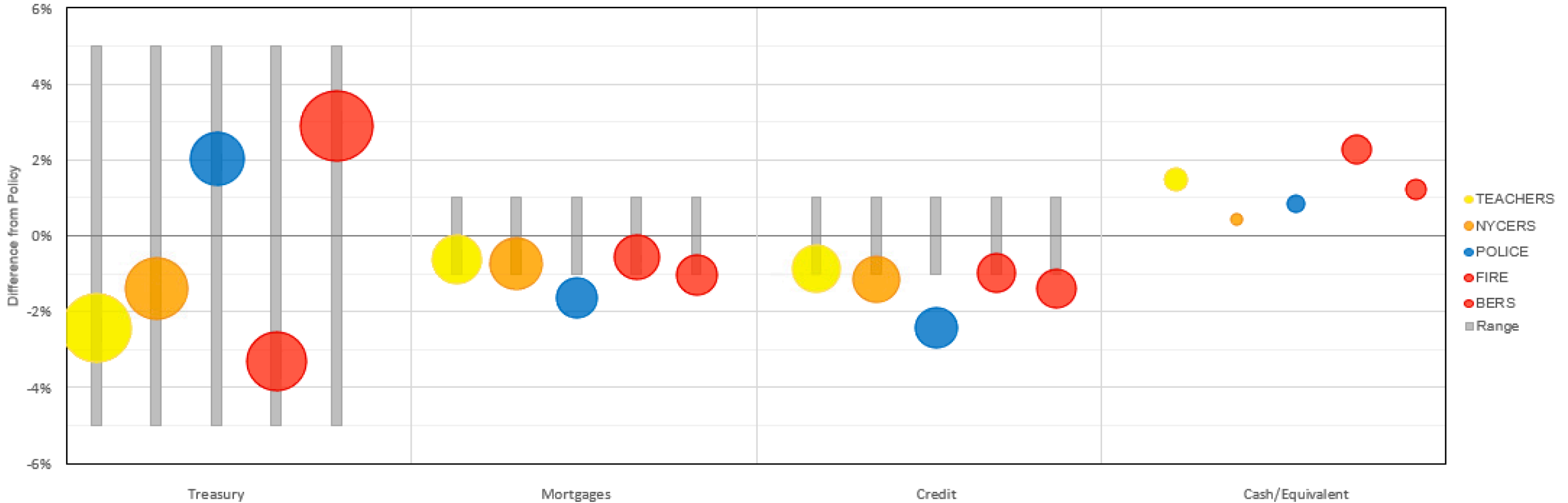


Source: State Street

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

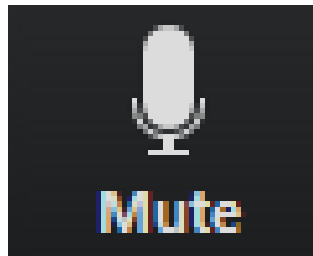


QUESTIONS?

If you would like to ask a question



When you're done, hit mute again



PERFORMANCE REPORTING

2nd Quarter 2020

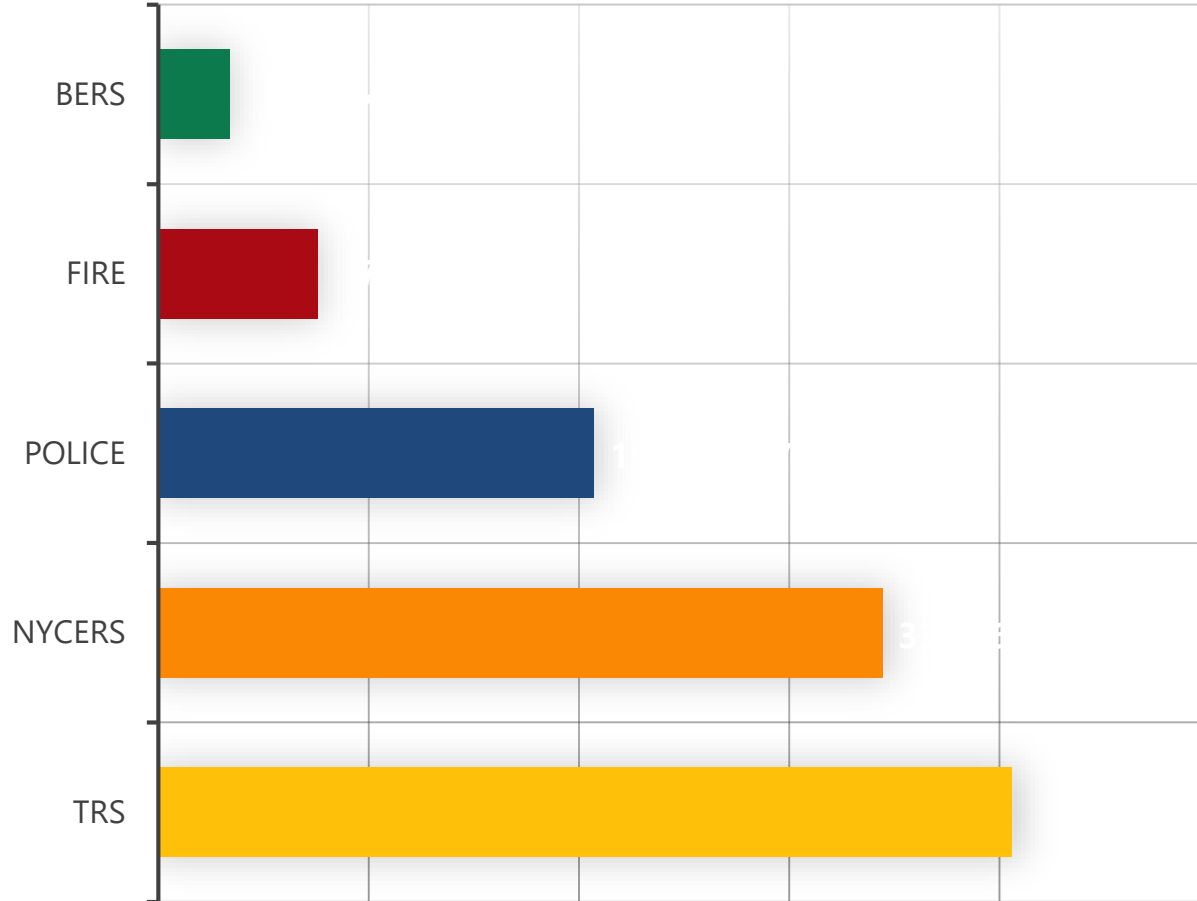


NYC Retirement Systems AUM (% , in millions)

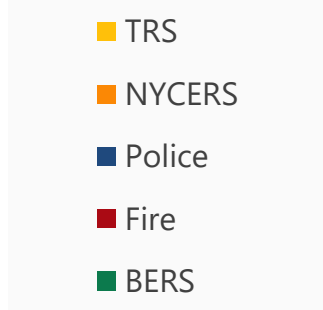
\$213,577m Total AUM for all 5 Systems as of June 30, 2020



Board of Education Retirement System



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%

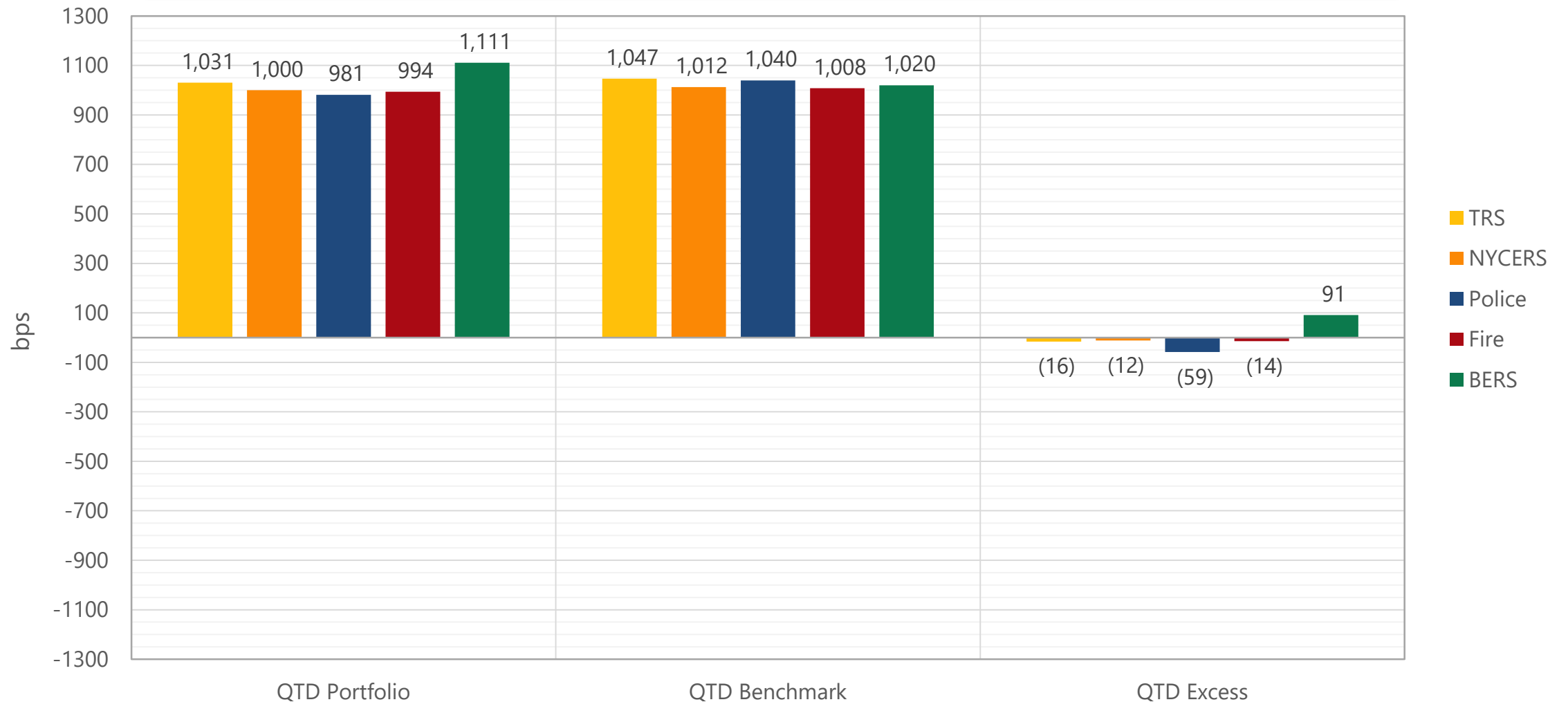
Net of mgr. fees in public asset classes are recorded on an accrual basis. Private markets data is reported on a lagged basis.

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)

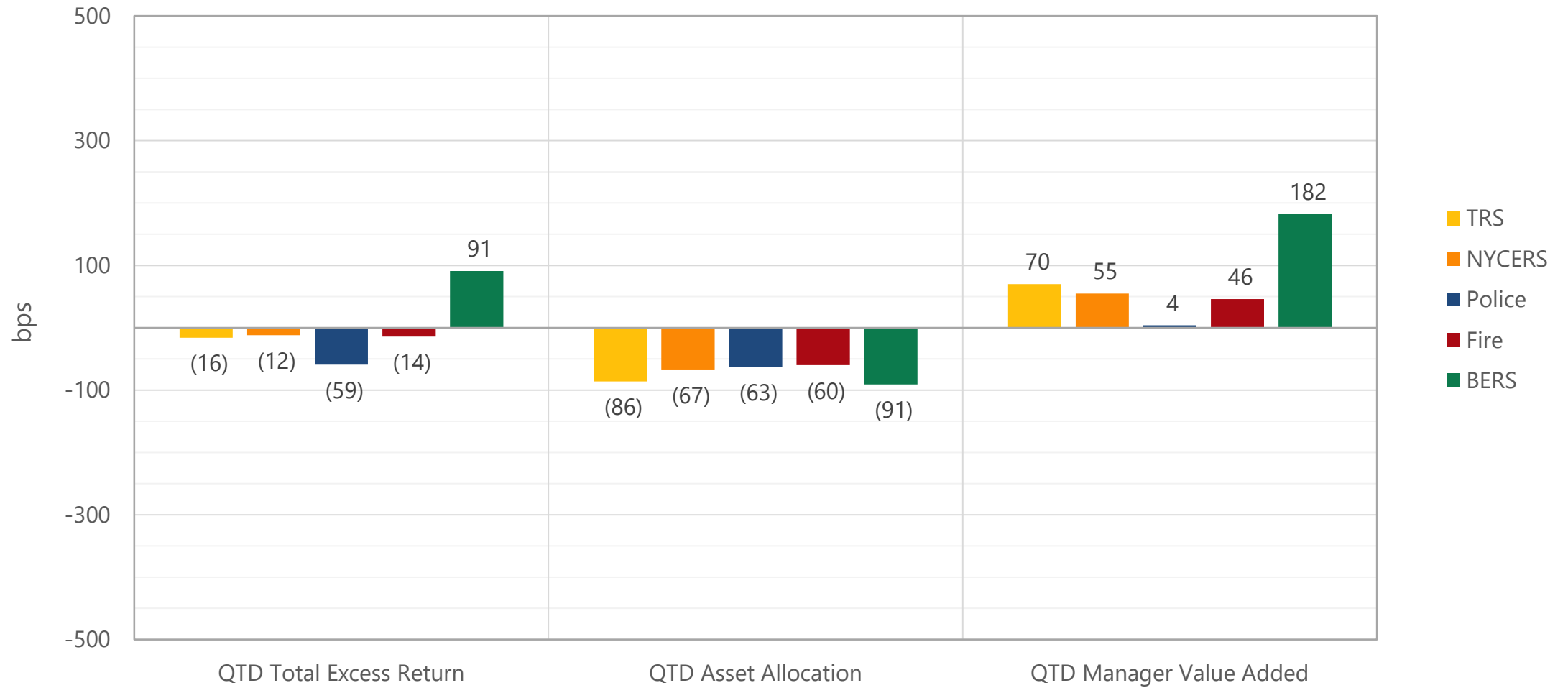


Source: State Street



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

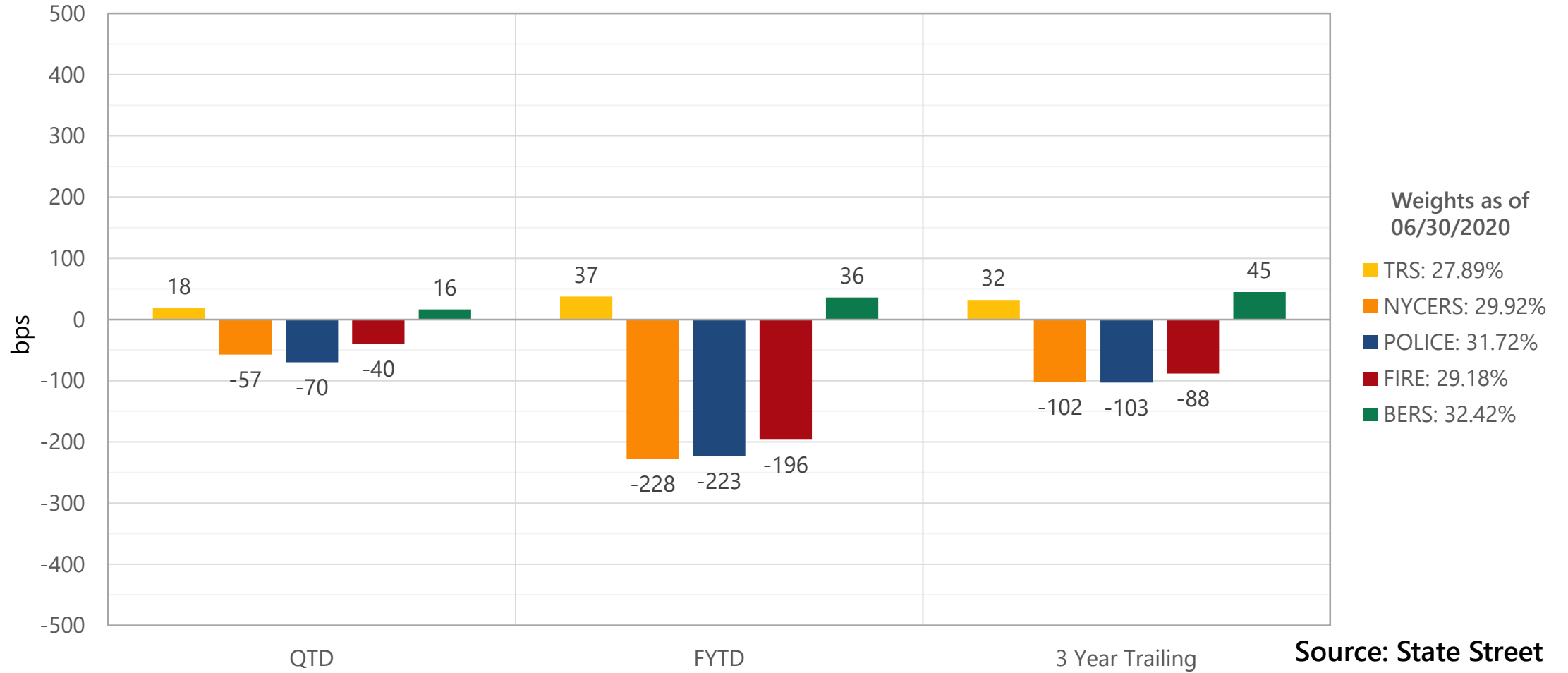
Basis Points of Excess Return (SSB **T, N**, p.14; **F** p.16 ; **P** p.17; **B** p.19)



Source: State Street

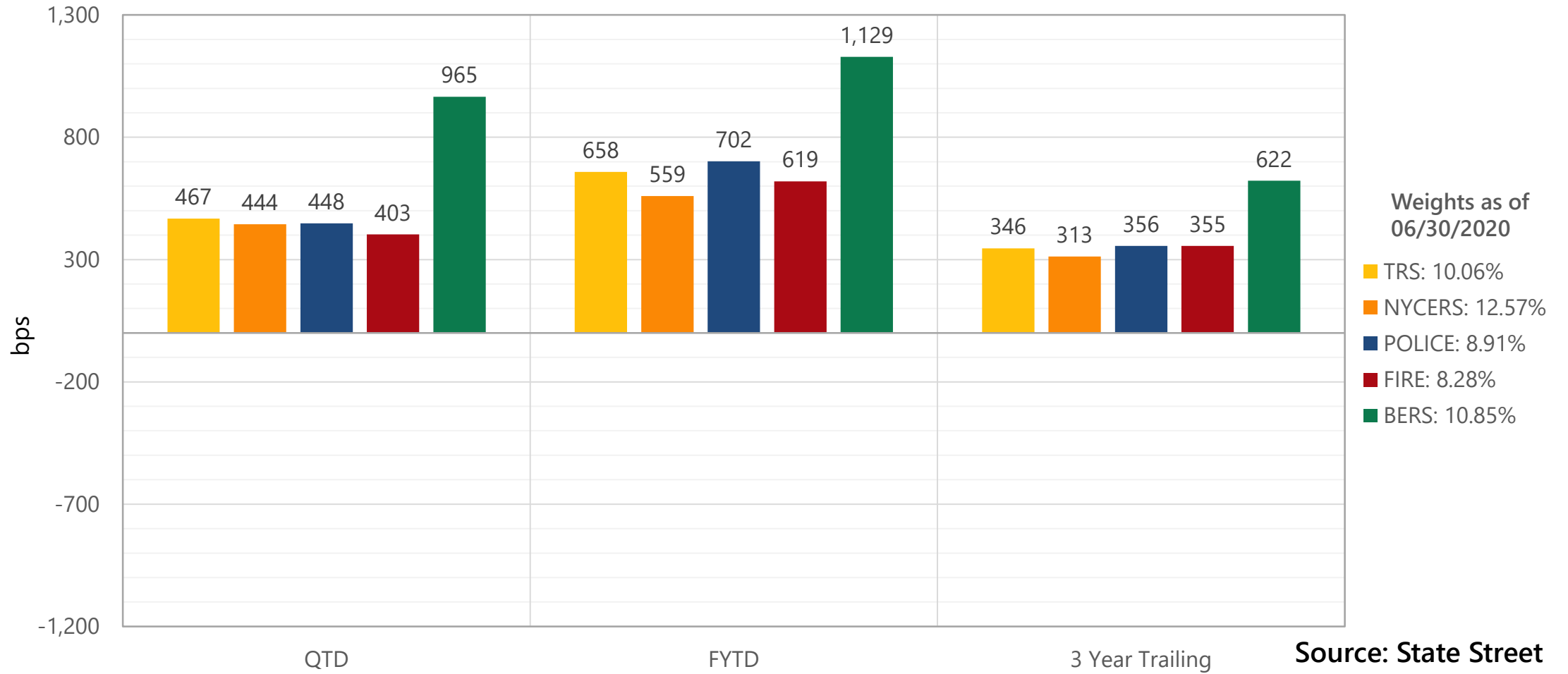
Value Added – Total Domestic Equity

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



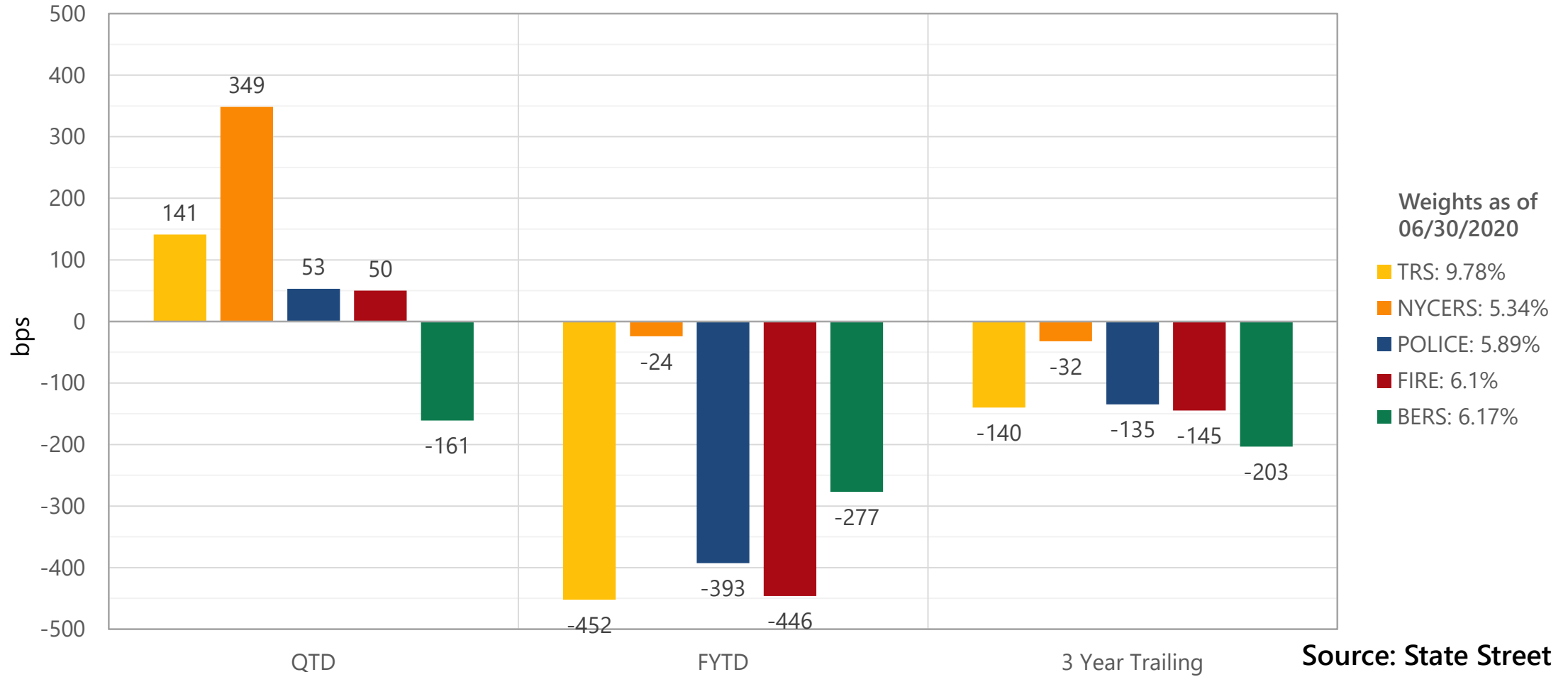
Value Added – Total World Ex-USA

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



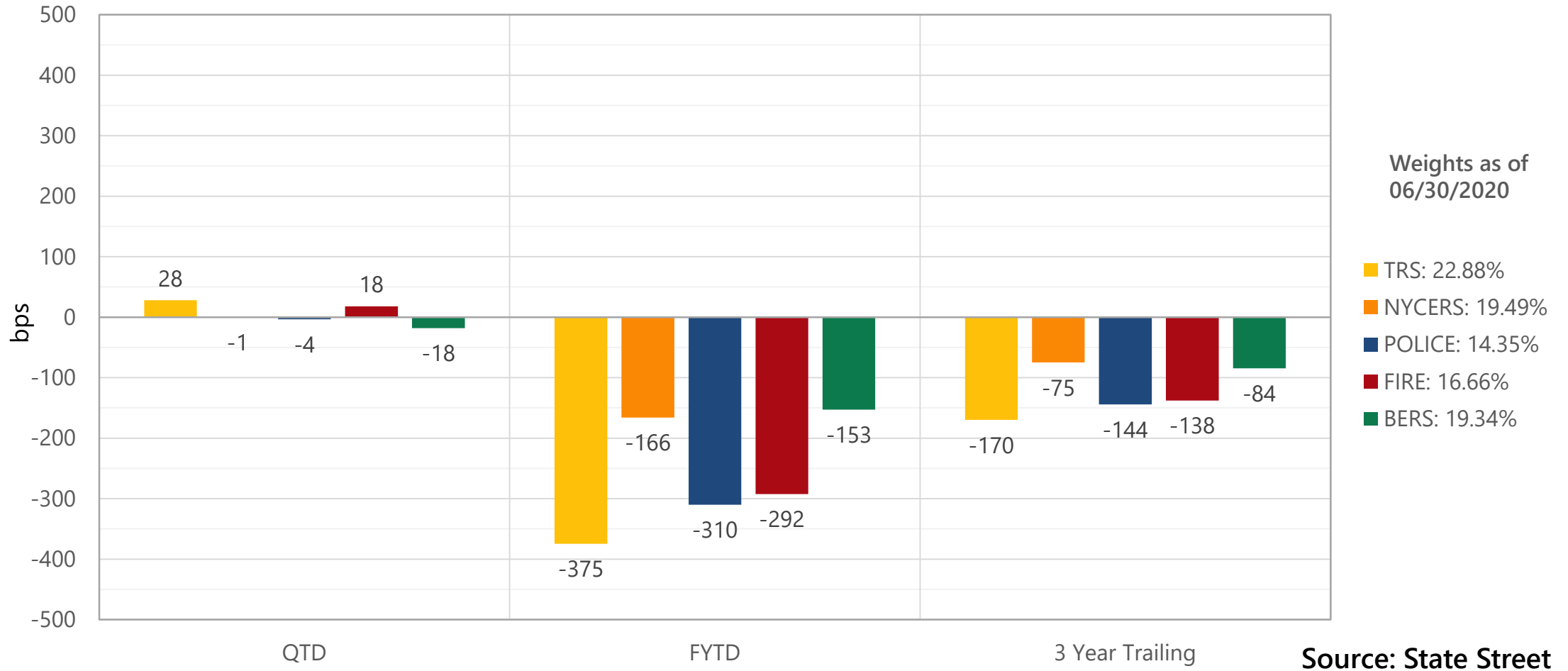
Value Added – Total Emerging Markets

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



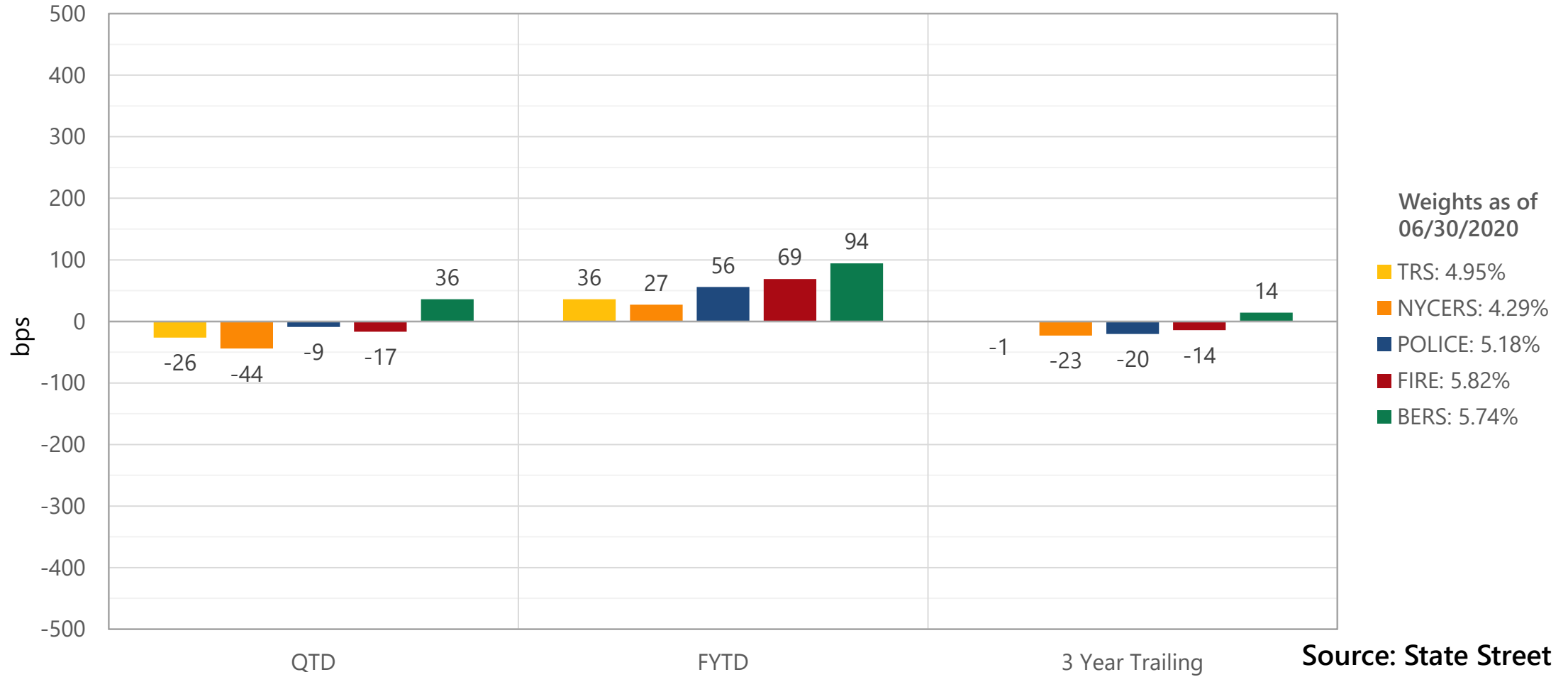
Value Added – Total Structured Fixed Income

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



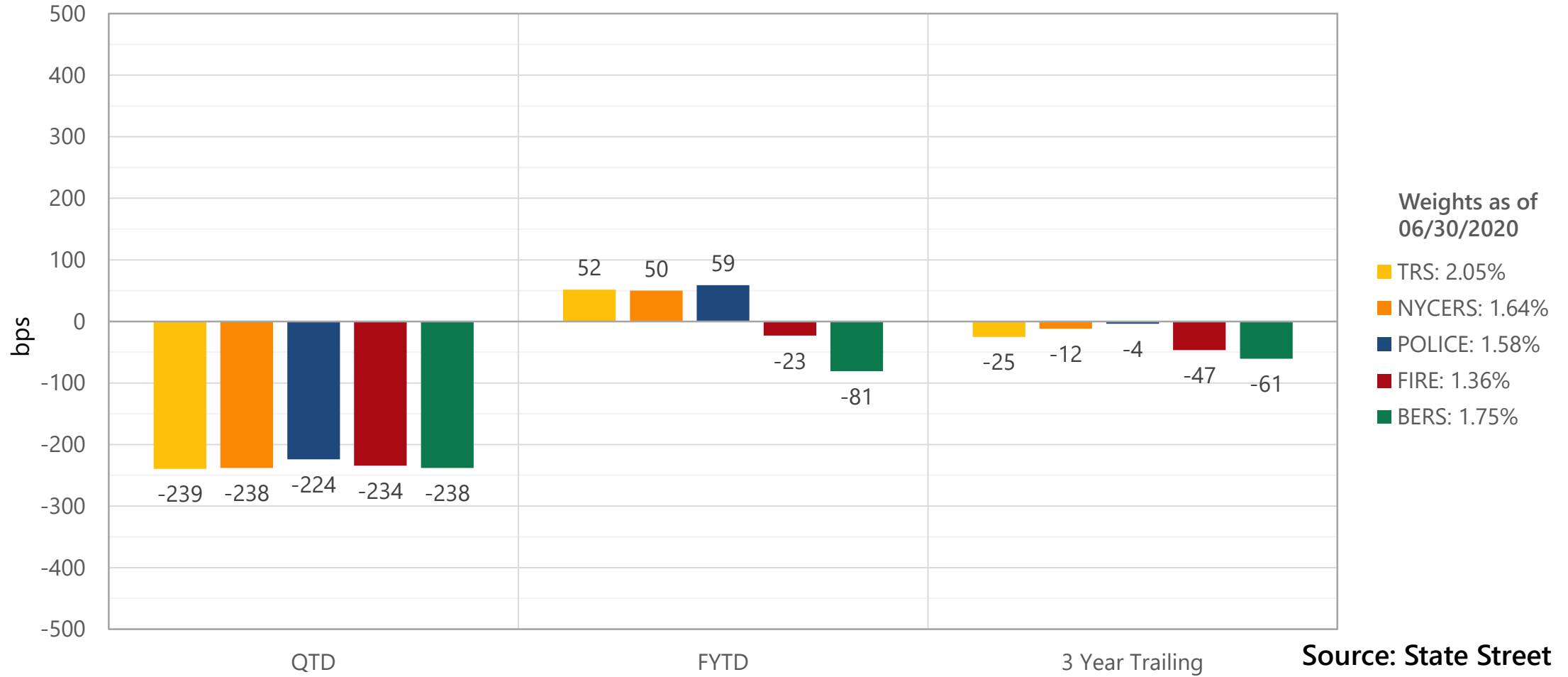
Value Added – High Yield

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



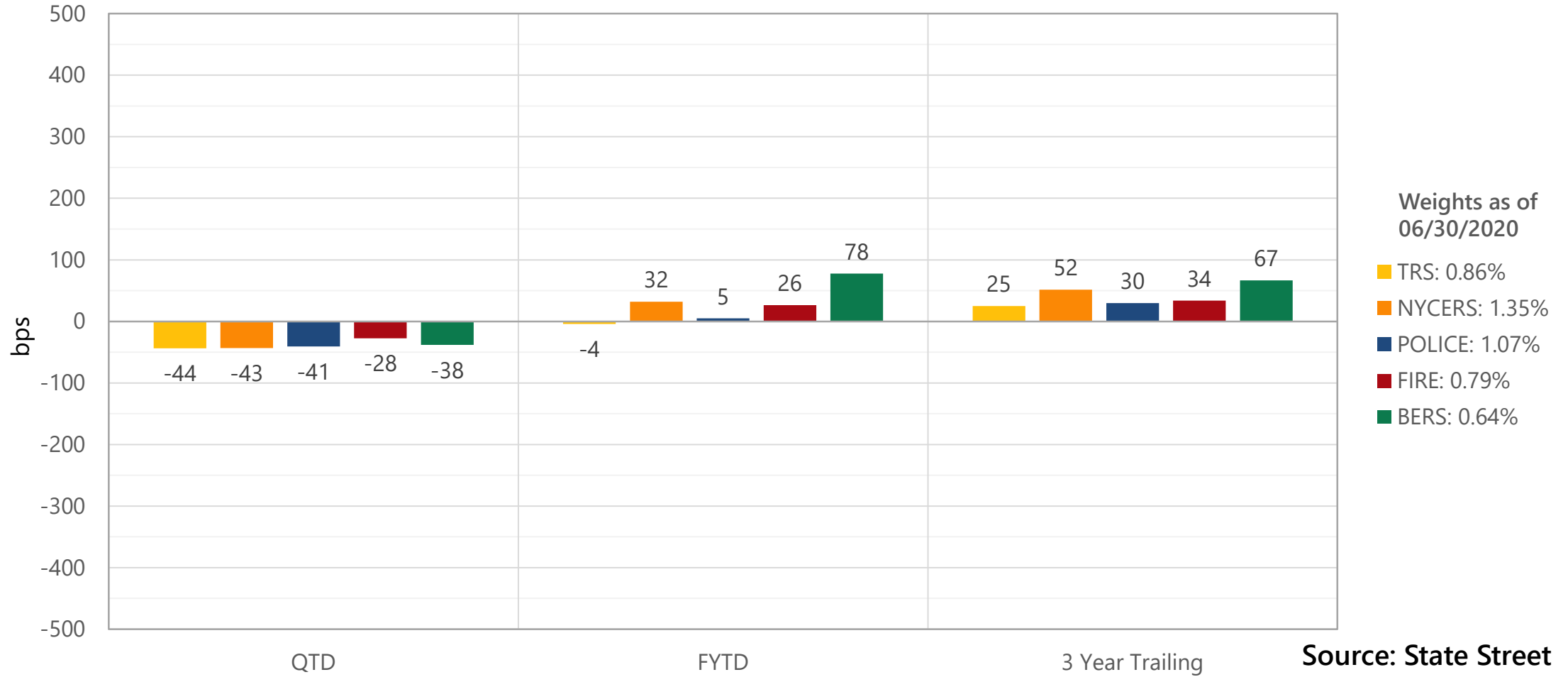
Value Added – Bank Loans

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



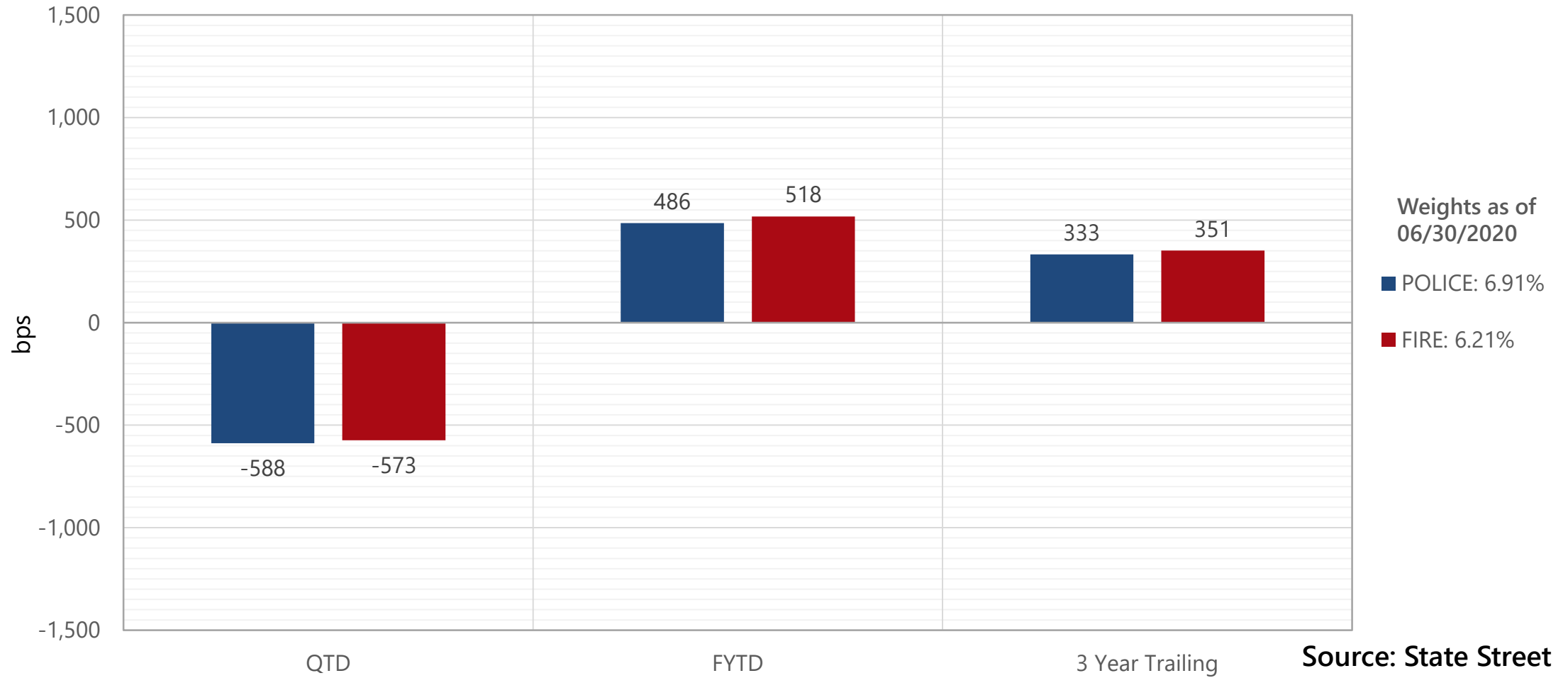
Value Added – Economically Targeted Investments

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



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

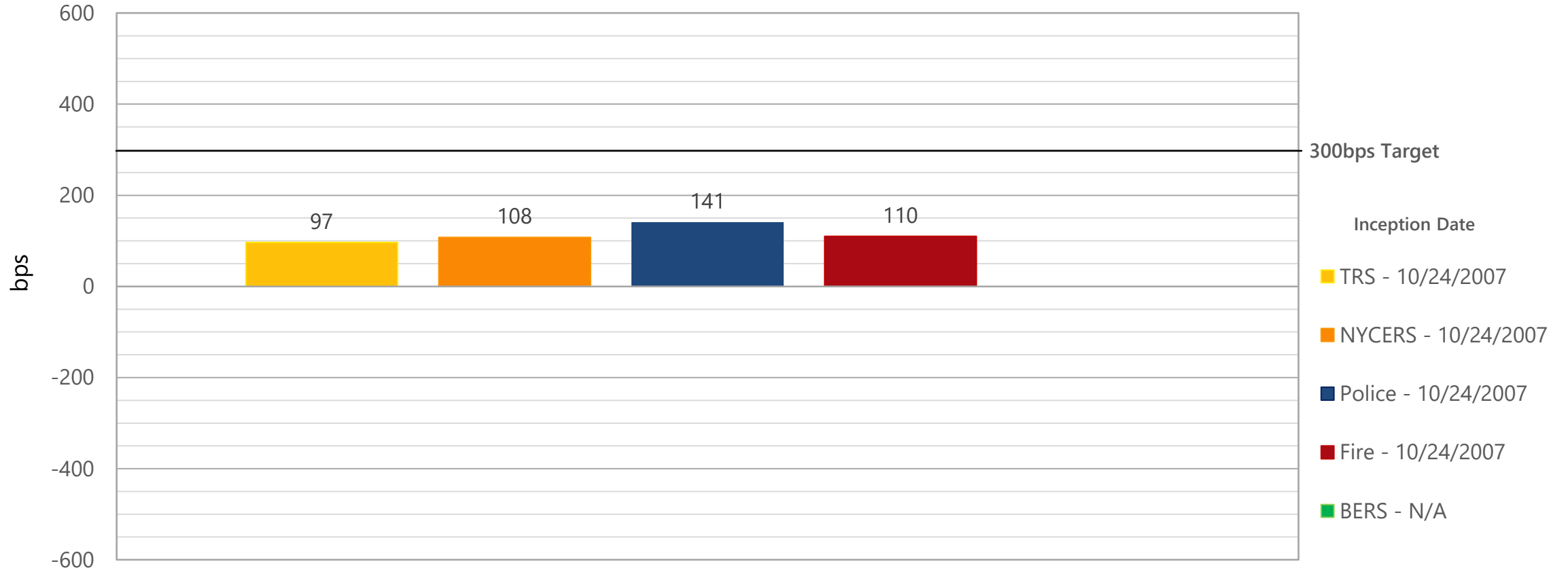
Source: Aksia

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

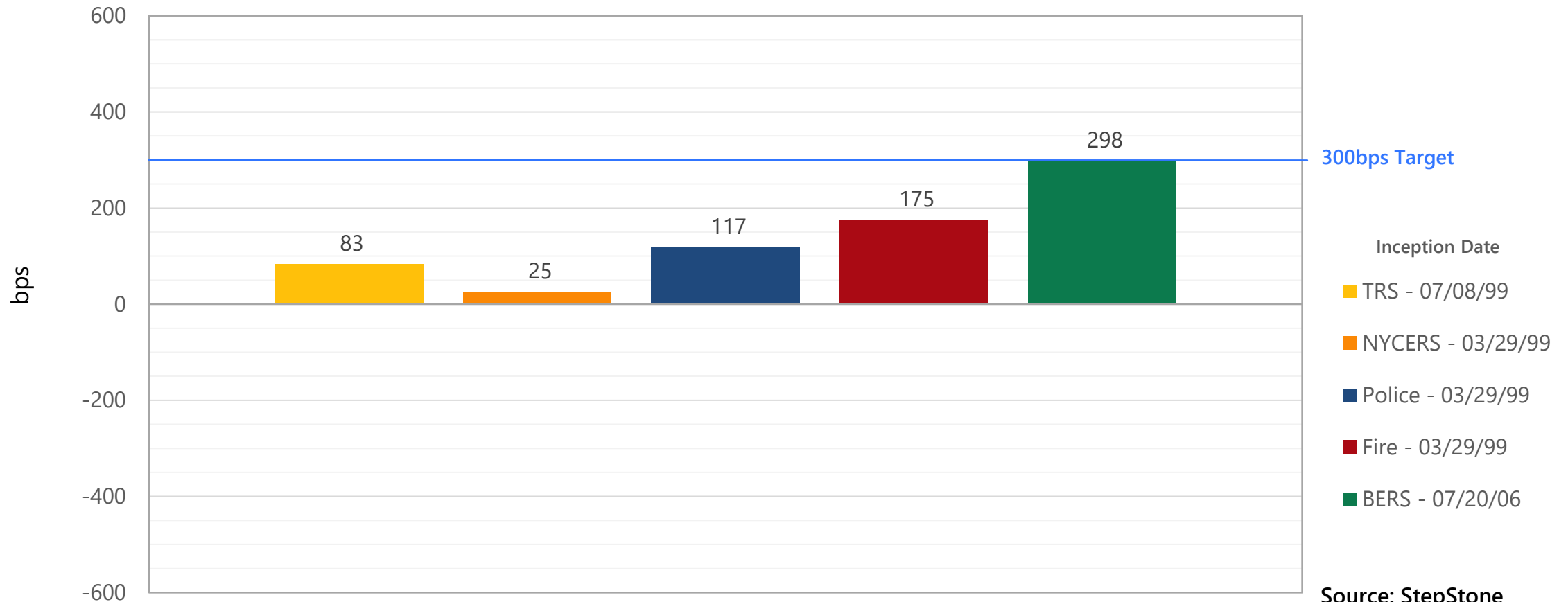
Source: State Street

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



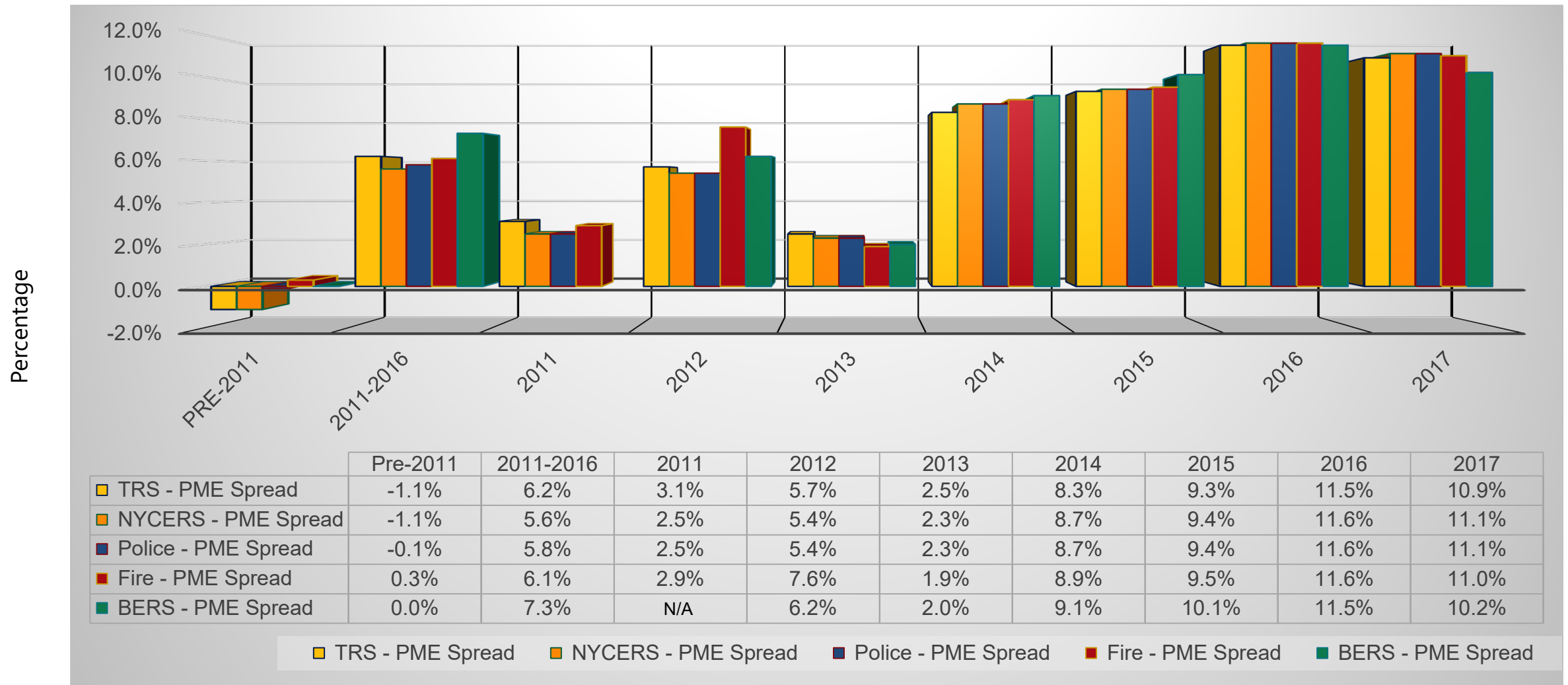
Excess Return Since Inception; The PE Benchmark is the Russell 3000 + 300 bps as of 3/31/20

Source: StepStone Group & Hamilton Lane

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



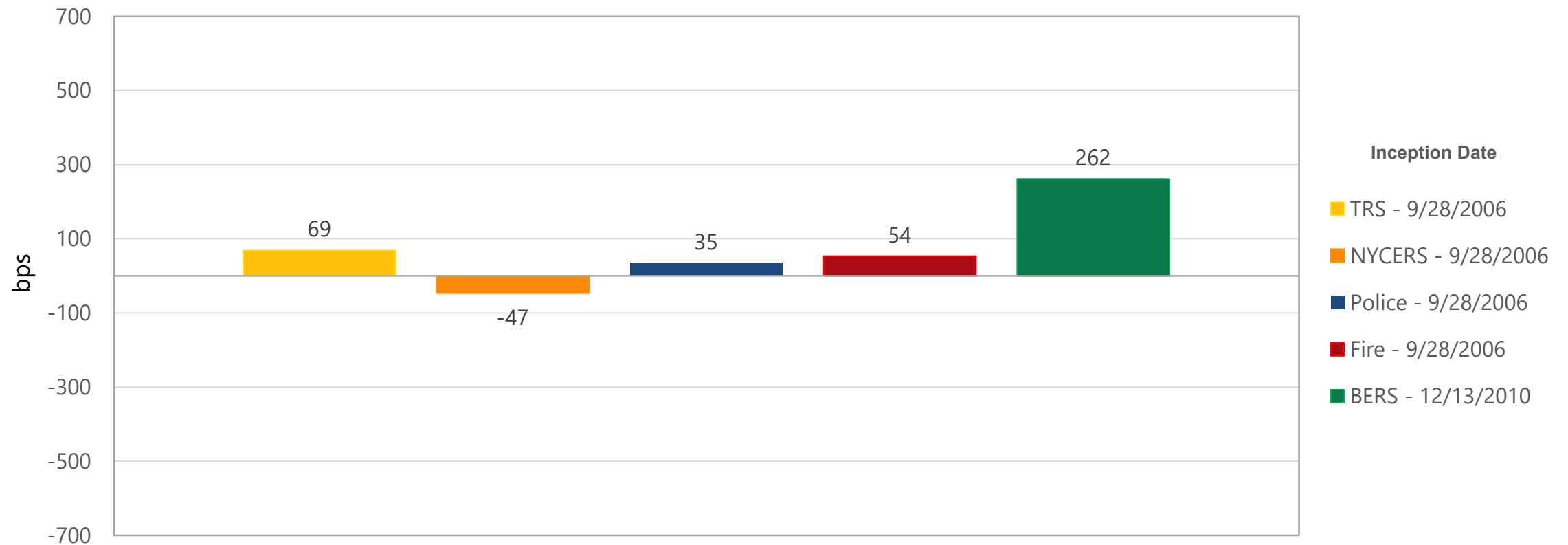
Private Equity Value Added – PME Spread By Vintage Year as of 3/31/20



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

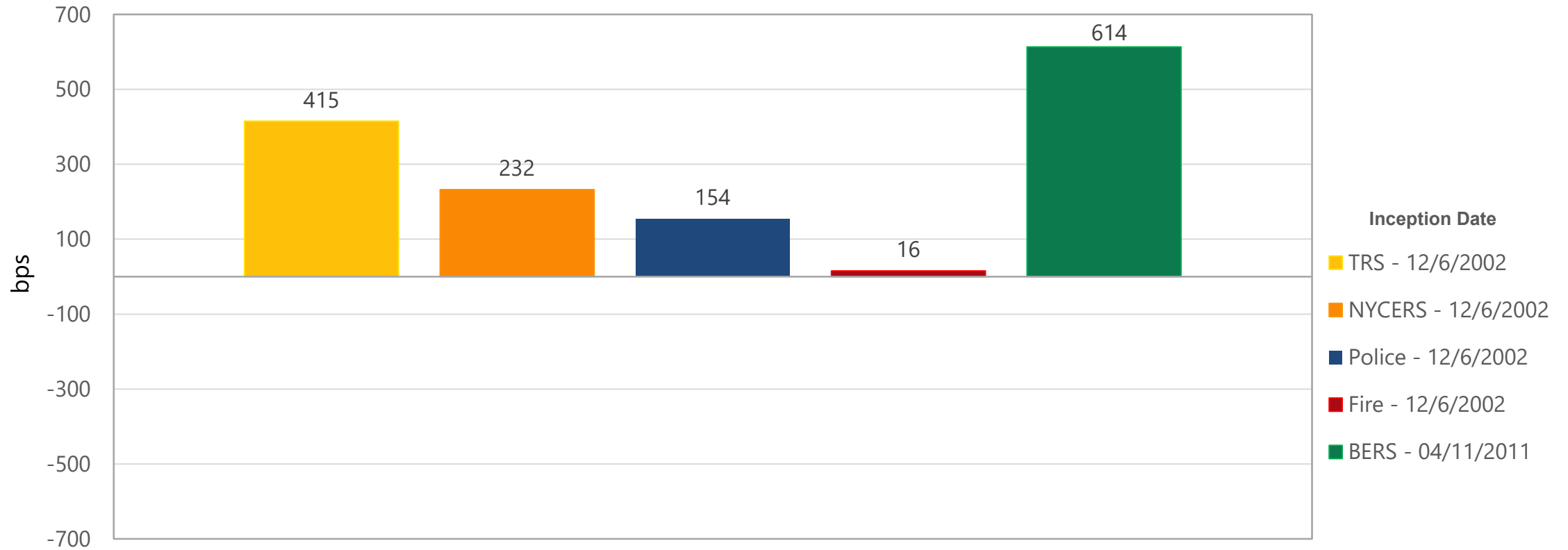
Source: State Street

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



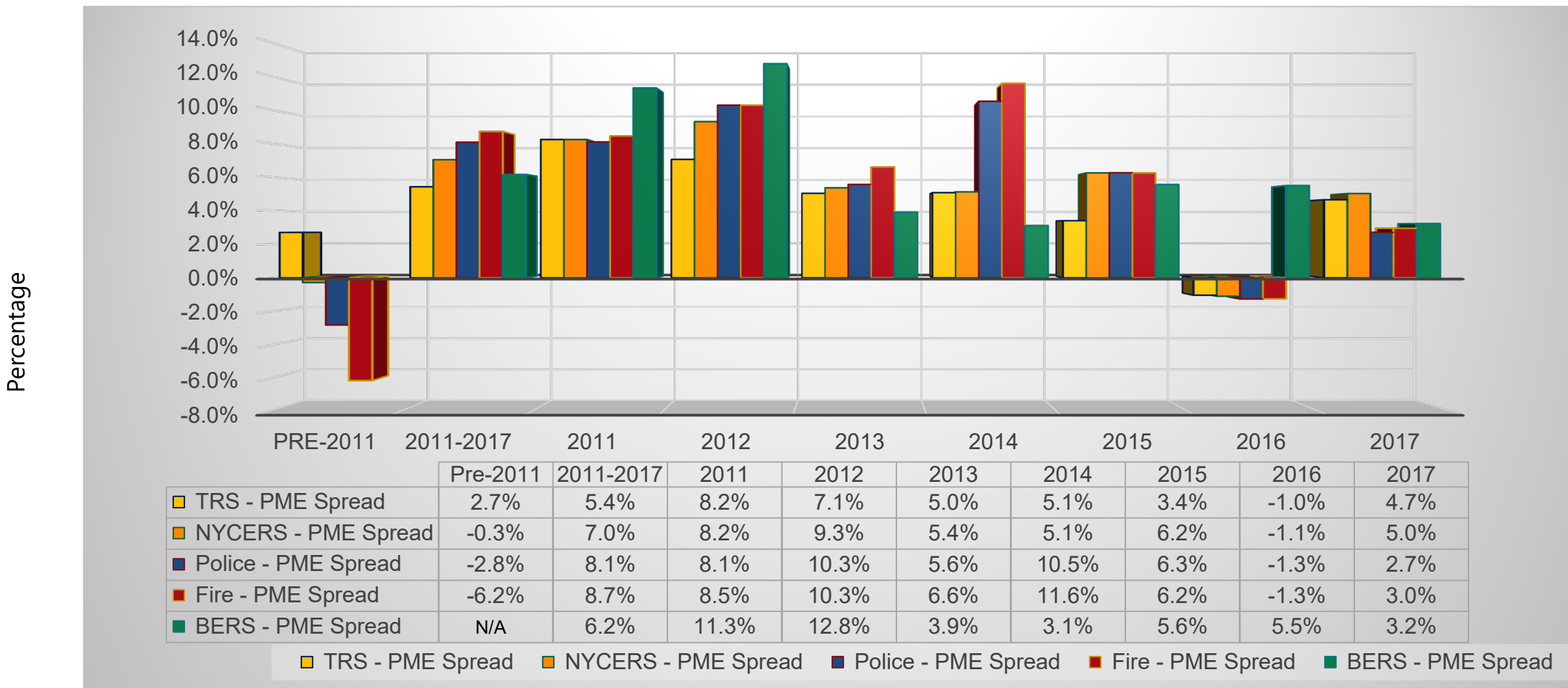
Excess Return Since Inception; Non-core PME = 60% Russell 3000 & 40% Barclay Agg. as of 3/31/20

Source: State Street

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



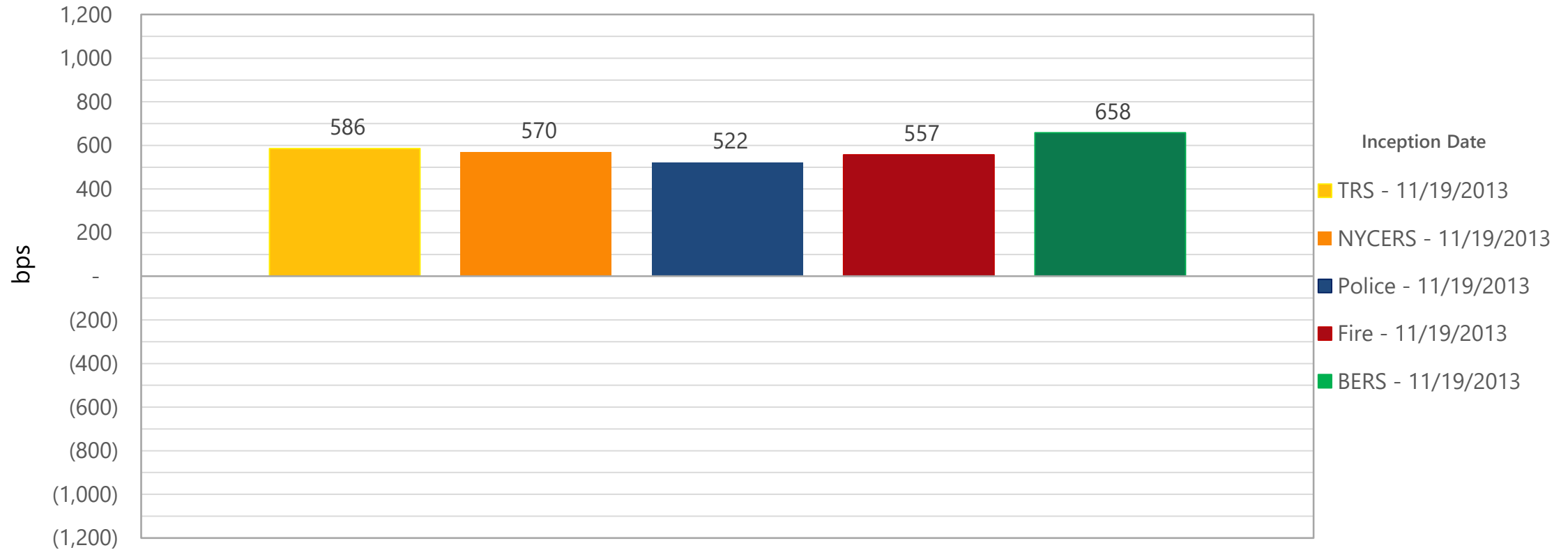
Private Real Estate (Non-Core) Value Added - PME Spread By Vintage Year as of 3/31/20



Source: State Street

Value Added - Infrastructure

Basis Points of Cumulative IRR above Public Market Equivalent



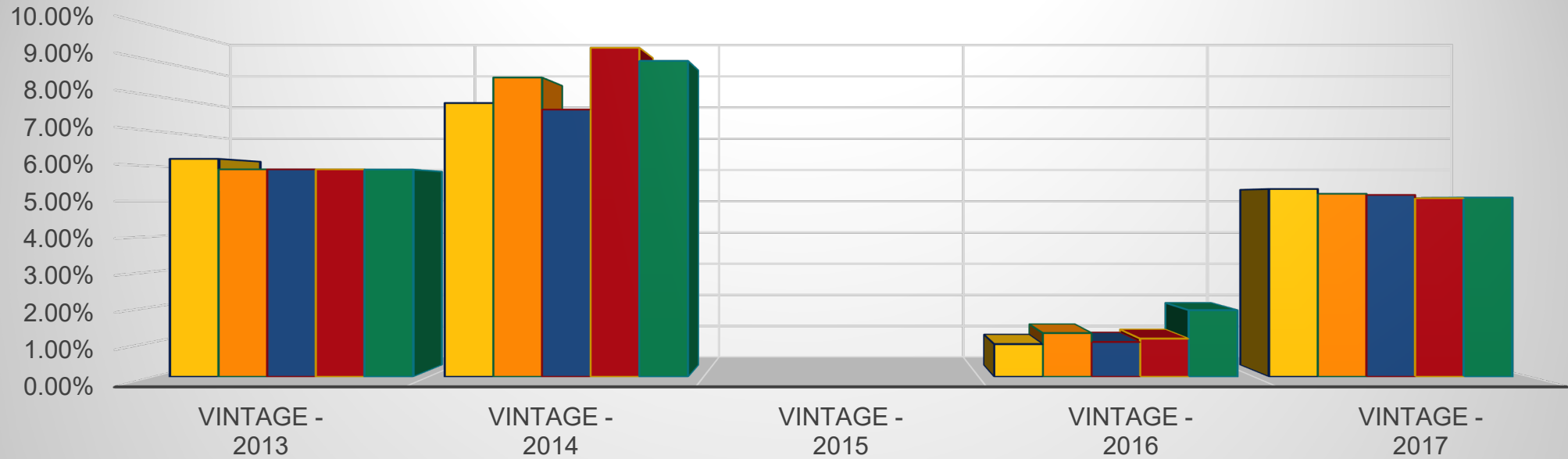
Excess Return Since Inception; PME: 50% R3000 & 50% Barclays Agg. as of 3/31/20

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

Percentage



	Vintage - 2013	Vintage - 2014	Vintage - 2015	Vintage - 2016	Vintage - 2017
■ TRS - PME Spread	6.21%	7.80%	N/A	0.93%	5.35%
■ NYCERS - PME Spread	5.91%	8.52%	N/A	1.24%	5.21%
■ Police - PME Spread	5.91%	7.61%	N/A	0.99%	5.18%
■ Fire - PME Spread	5.91%	9.37%	N/A	1.09%	5.09%
■ BERS - PME Spread	5.90%	9.00%	N/A	1.90%	5.11%

■ TRS - PME Spread
 ■ NYCERS - PME Spread
 ■ Police - PME Spread
 ■ Fire - PME Spread
 ■ BERS - PME Spread

Source: StepStone Group

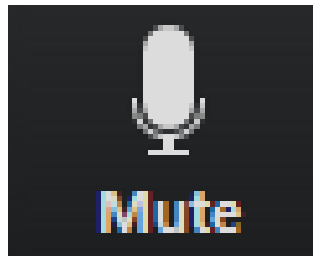


QUESTIONS?

If you would like to ask a question



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Risk Update

2nd Quarter 2020

Total Plan Summary

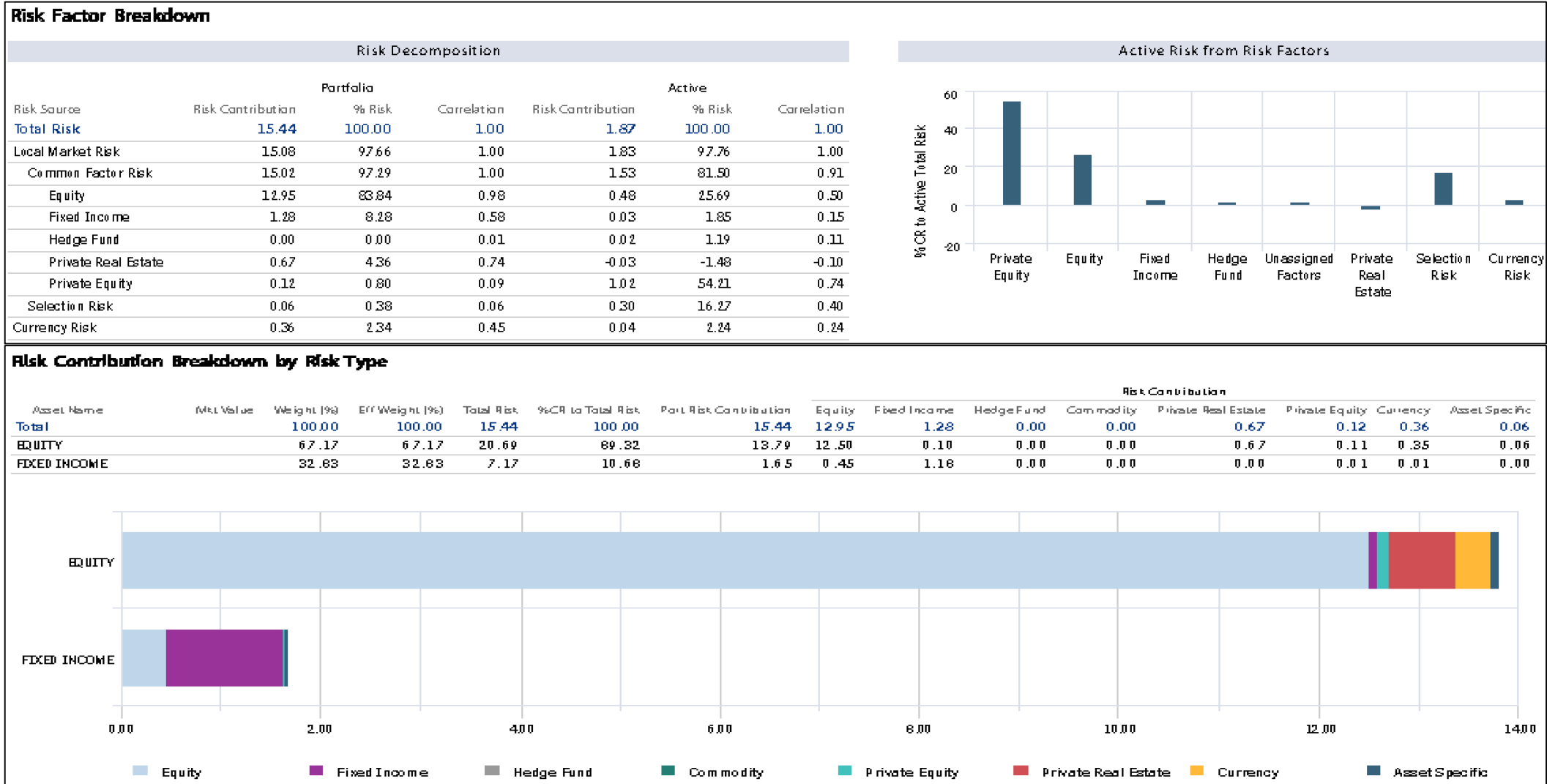


Source: MSCI



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



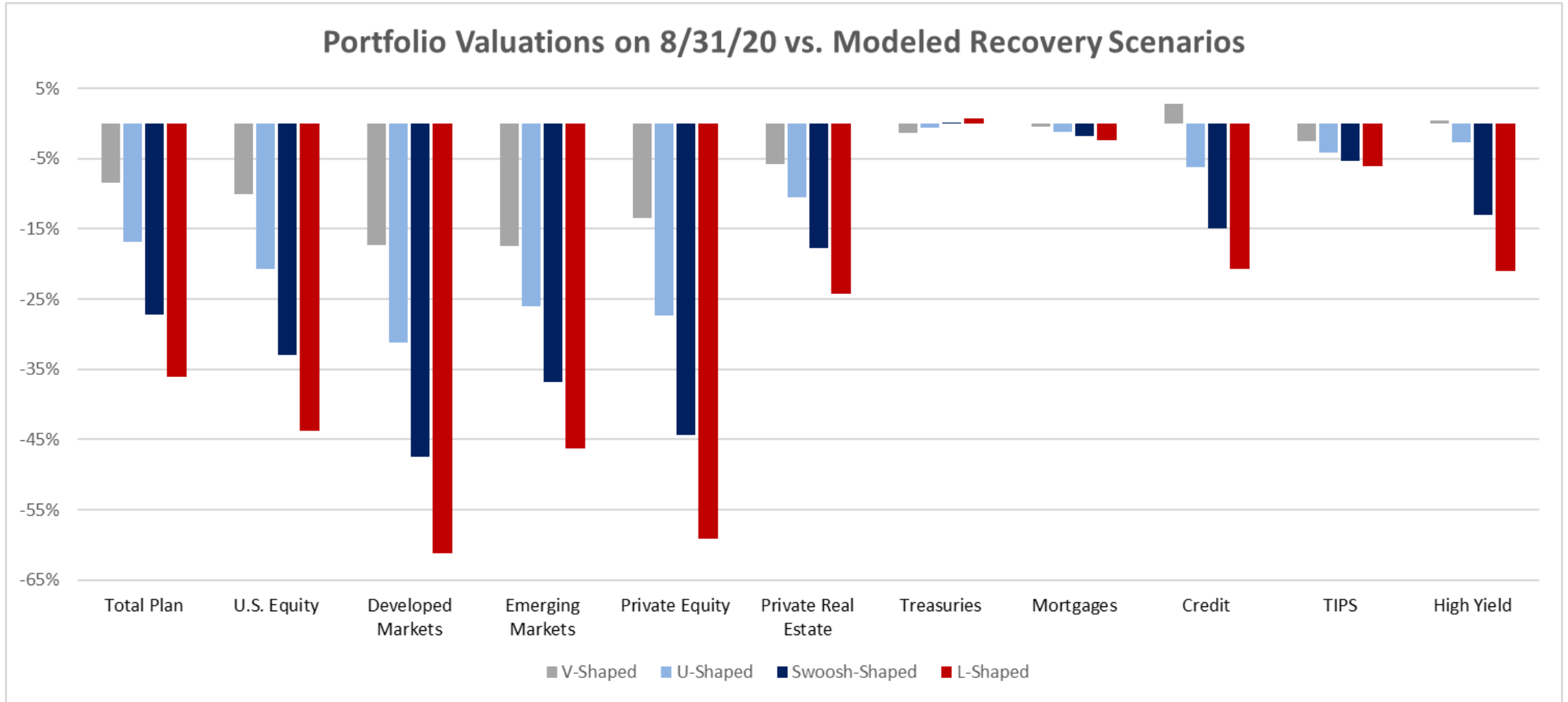
COVID Scenario Analysis

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

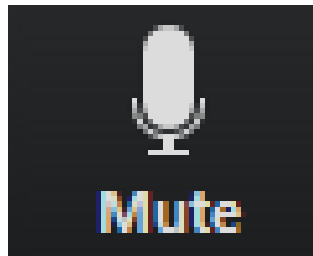


QUESTIONS?

If you would like to ask a question

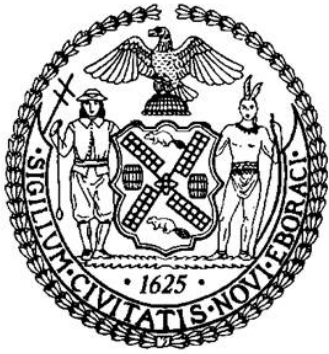


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**SUPPLEMENTAL MATERIAL -
PERFORMANCE REPORTING (Public):**

Quarterly Fund Performance Overview (Public):



New York City
Board of Education Retirement System
Performance Overview as of June 30, 2020

Total Fund Overview



New York City Board of Education Retirement System

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Through June 30, 2020

New York City Board of Education Retirement System (BERS)

Consultant's Commentary – Through June 30, 2020

Total Fund Performance

The Board of Education Retirement System (BERS) Total Fund returned +11.11% net of fees for the quarter ended June 30, 2020, versus the policy benchmark's return of +10.20%. For the fiscal year to date as of June 30, 2020, the Total Fund returned +5.72% net of fees, versus the benchmark return of +4.29%.

Total Fund Asset Allocation

As of June 30, 2020, the BERS Total Fund had \$6.83 billion, up from \$6.14 billion at March 31, 2020. For the quarter and the fiscal year to date periods, excess return versus its benchmark was attributed to investment manager selection. Specifically, Ballie Gifford and Morgan Stanley as well as private managers.

U.S. Equity Commentary

As of June 30, 2020, U.S. Equity was \$2.21 billion or 32.4% of the NYBERS Total Fund. The U.S. equity composite was positive in the second quarter of 2020 returning +22.19%. This performance was above the Russell 3000 index return of +22.03%.

Active U.S. Equity Managers

- **Wellington** returned +24.62% during the quarter, above the S&P Midcap 400 Index return of +24.07%. For the fiscal year to date as of June 30, 2020, Wellington returned -0.12% versus -6.70% for the S&P Midcap 400 Index.
- Sector allocation, a result of their bottom-up stock selection process, was the primary driver of relative outperformance. Allocation effect was driven by their underweight to real estate and utilities and overweight to information technology, but partially offset by the underweight to consumer discretionary and energy. Stock selection modestly detracted from returns. Weak selection in healthcare, materials and energy was partially offset by selection in real estate and consumer discretionary.
- At the issuer level, the top two relative contributors were out of benchmark allocations to Wayfair and Redfin, while the top two relative detractors were out of benchmark allocations to Markel and CommScope Holding. Shares of Wayfair increased considerably over the quarter

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Through June 30, 2020

after reporting a strong demand across the home and goods categories. Stay at home mandates have led to an increase in online shopping. Additionally, the online furniture retailer posted Q1 earnings exceeding expectations. Markel reported first quarter 2020 earnings where the company took a \$1.4 billion loss, driven mainly by \$1.7 billion in realized investment losses and \$325 million in claims losses related to COVID-19.

- **Wasatch** returned +33.66% during the quarter, above the Russell 2000 Growth Index return of +30.58%.
- Stock selection benefited performance relative to the benchmark—and was particularly strong in financials, information-technology and consumer discretionary. One of the strategy's top individual stock contributors was Ollie's Bargain Outlet Holdings, Inc. (OLLI). The company sells closeout, overstock, salvage, irregular and manufacturer-refurbished items. Merchandise for sale includes hardware, books, stationery, carpet, groceries, toys, seasonal products and sporting goods. Since the coronavirus pandemic began, Ollie's stores have remained open because they sell items necessary for daily living. While the virus has crimped sales by more than 10% in the short term, the company has over \$100 million of cash on hand and has access to a credit line of an additional \$100 million.
- The largest detractor from strategy performance was Barnes Group, Inc. (B), a global provider of highly engineered products, differentiated technologies and innovative solutions that serve a wide range of aerospace, automotive and other industrial customers. With industrials being impacted by Covid-19 and longer-standing trade conflicts, investors have grown nervous on the stock. However, the company's fundamentals, including its margins and manufacturing capacity, were trending in the right direction last year.

World ex-USA Commentary

As of June 30, 2020, World ex-USA Equity was \$740.8 million (10.9%) of the NYBERS Total Fund. World ex-USA Equity returned +25.86% in the second quarter of 2020 versus +16.21% for the World ex-USA custom benchmark.

Active World ex-USA Equity Managers

- **Sprucegrove** returned +11.92% during the quarter versus +15.34% for NYC Developed Value Benchmark. For the fiscal year to date as of June 30, 2020, Sprucegrove returned -16.97% versus -5.42% for the NYC Developed Value Benchmark.
- The portfolio continues to represent high quality value style holdings with a projected ROE of 14.9%, which is higher than the World ex-USA Index at 11.0% and financial leverage of 2.1x, which is below the World ex-USA Index at 2.7x. The portfolio has had a normalized P/E of 11.6x, a 1.8x P/B and a 3.6% dividend yield. These characteristics are consistent with the historical profile of the manager. The manager believes the portfolio is attractively valued compared to the market.

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- The U.K. was the largest country exposure in the Fund at 22.0%, followed by Japan at 14.3%. Exposure to Emerging Markets was 14.0% and cash was 2.6% of the Fund at quarter end.
- Over the quarter, the Fund's underperformance was mainly due to stock selection in Canada (Saputo and TC Energy) and France (Total and Air Liquide). An underweight position in Australia and Japan also had a negative impact on relative performance. Underperformance was partially offset by positive relative performance due to Emerging Markets exposure (India and Korea). An overweight position in the United Kingdom, Ireland and Norway also had a positive impact on relative performance.
- The top 10 holdings represent 22.4% of the portfolio.
- **Baillie Gifford** returned +38.02% in the quarter versus +15.34% for NYC Developed Growth Benchmark. For the fiscal year to date as of June 30, 2020, Baillie Gifford returned +31.65% versus -5.42% for the NYC Developed Growth Benchmark.
- ASML, semiconductor equipment manufacturer, was the portfolio's largest holdings at 7.9%
- At quarter end, the portfolio had 14.9% invested in Emerging Markets.
- The top 10 holdings represent 43.8% of the portfolio.
- **Acadian** outperformed for the quarter, +20.89% versus +20.83% for the S&P EPAC Small Cap Index. For the fiscal year to date as of June 30, 2020, Acadian returned -2.52% versus -4.00% for the S&P EPAC Small Cap Index.
- For the second quarter, the portfolio outperformed its benchmark by 6 basis points.
- The portfolio had a P/E of 11.9x while the benchmark had a P/E of 18.2x.
- At quarter end, the portfolio's emerging markets exposure was 9.9%.
- The portfolio held 1,333 stocks.
- **Algert** outperformed for the quarter, +21.99% versus +19.88% for the MSCI EAFE Small Cap Index. For the fiscal year to date as of June 30, 2020, Algert returned -4.49% versus -3.52% for the MSCI EAFE Small Cap Index.

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- During the second quarter, stock selection was a positive contributor to excess returns relative to the benchmark as was the Strategy's allocation across various common risk factors (e.g. a company's industry, country, size and beta characteristics). Catalyst-related exposures were the primary contributors to positive excess returns during the quarter, most notably in Europe and Japan. Given positive investor sentiment and increasing risk sentiment, signals that seek to identify firms with attractive trends in their underlying fundamentals generated gains. Exposures driven by sentiment derived from text-based sources also fared well as these data sets provided timely information during this highly uncertain period.
- Catalyst-related exposures were a detractor to performance during the quarter. Out of favor firms with attractive valuation underperformed the broader market as investors continue to question the viability of structurally challenged firms within the context of a highly uncertain economic backdrop. Relative Value losses were most pronounced within Japan and Europe as economic headwinds were perceived to be most severe within these regions. Similar to prior quarters, signals based on historical, asset-based valuation metrics were the primary drivers of underperformance.
- The portfolio held 152 stocks compared to MSCI EAFE Small Cap of 2,319 stocks.

Emerging Markets Equity Commentary

As of June 30, 2020, Emerging Markets Equity was \$421.1 million or 6.2% of the NYBERS Total Fund. Emerging Markets underperformed for the quarter, +16.47% versus +18.08% for the MSCI Emerging Markets, Net Index.

Emerging Markets Equity Managers

- **Acadian** underperformed for the quarter, posting a +15.96% versus +18.08% for the MSCI Emerging Markets, Net Index. For the fiscal year as of June 30, 2020, Acadian returned -7.21% versus -3.39% for the MSCI Emerging Markets, Net Index.
- The portfolio had a P/E of 10.6x, while the benchmark had a P/E of 16.0x.
- At quarter end, the portfolio held 413 stocks.
- **CONY GT EM BlackRock** returned +17.64% versus +18.08% for the MSCI Emerging Markets, Net Index during the quarter. CONY GT EM BlackRock underperformed for the fiscal year as of June 30, 2020 returning -3.72% versus -3.39% for the MSCI Emerging Markets, Net Index.

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Through June 30, 2020

- In Asia, key economic data surprised on the upside, with China's services PMI hitting a decade high, even as many indicators suggest that economic activity still has a long way to go to make up for lost ground. China continued to show strong performance, adding 15.4% to the index. Outside China, Taiwan (+21.5%) and South Korea (+19.3%), where the coronavirus curve has been flattened, outperformed the broader EM index. In emerging EMEA, Russia kept up with the rest of EM, adding 19% as crude oil prices recovered. In Latin America, Brazil rallied +22.9% after plunging more than -50% in the previous quarter. Similarly, Argentina advanced +43.7% as the country recovered from the coronavirus outbreak. Elsewhere in South America, Colombia (+10.1%) and Peru (+10.3%) underperformed in the region.
- From a sector perspective, all GICS 1 sectors advanced in the quarter. Healthcare saw a 37.5% rally, leading the broad index higher, followed by materials (+24.3%) and energy (+23.5%). The lowest sector returns were in financials (+7.7%) and real estate (+6%).

Global Equity Managers

- **Morgan Stanley** returned +33.15% versus +19.22% for the MSCI AC World Index, during the quarter. For the fiscal year as of June 30, 2020, Morgan Stanley outperformed returning +27.30% versus +2.11% for the MSCI AC World Index.
- The portfolio outperformed the MSCI AC World Index due to favorable stock selection and sector allocation. Stock selection in information technology, communication services and consumer discretionary contributed positively as shares of online retail and cloud computing leader Amazon, communications platform Zoom Video Communications, Swedish streaming platform Spotify, cloud software provider ServiceNow, Chinese social commerce platform Meituan Dianping and e-commerce solutions provider Shopify outperformed.
- A sector underweight position and stock selection in materials detracted from relative performance, as shares of U.S. construction aggregates producers Vulcan Materials and Martin Marietta Materials underperformed. Shares of Japanese mergers and acquisition advisory Nihon M&A Center, Japanese snack food manufacturer Calbee and Italian luxury brand Moncler SpA underperformed.
- **Fiera** returned +16.26% versus +19.36% for the MSCI World Index, during the quarter. For the fiscal year as of June 30, 2020, Fiera returned +5.25% versus +2.84% for the MSCI World Index.
- The largest detractors over the quarter were Becton Dickinson and CME Group. The US-based medical technology company, Becton Dickinson's stock underperformed given the uncertainties brought by COVID-19 and the resulting impact in demand of their products from their key end-markets such as elective procedures conducted in hospitals and research activity in labs. The company furthermore announced in May an unexpected equity issuance to shore up its balance sheet, negatively impacting the stock price. As for CME Group, its stock underperformed after futures volumes dropped following strong volumes in the first quarter due to volatility in the markets.

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Through June 30, 2020

- The leading contributors to performance over the quarter were Moody's and Keyence. Despite lowering its guidance, Moody's stock outperformed as the company continues to have solid issuance volumes and its analytics business remains strong with healthy organic growth and robust demand for its products. As for Keyence, the company continues to be an experienced player at the forefront of factory automation. While the COVID-19 situation is expected to impact customers' operations and their investment plans over the short-term, the company has seen a very encouraging rapid recovery of their China business, indicating that demand for their products remains strong and boosting hopes for a rapid recovery of its' overall sites.

Fixed Income – Structured Manager Composite Commentary

As of June 30, 2020, the Total Structured Portfolio was \$1.32 billion or 19.3% of the NYBERS Total Fund. Structured Fixed Income returned +2.10% in the second quarter versus +2.28% for the benchmark. For the fiscal year to date as of June 30, 2020, Structured Fixed Income returned +11.47% versus +13.00% for the benchmark.

Fixed Income – Structured Manager Composite Managers

- **BlackRock (mortgages)** returned +1.45% in the quarter, outperforming the FTSE Mortgage index return of +0.32%. For the fiscal year as of June 30, 2020, BlackRock (mortgages) returned +5.90% versus +5.96% for the FTSE Mortgage index.
- Sector allocation and security selection contributed to performance on a relative basis. The portfolio's allocation to Agency collateralized mortgage obligation and selection within both the 15YR PT and 30YR PT subsectors benefited results versus the index.
- At quarter end, the portfolio held 1,513 holdings.
- **Prudential (credit)** returned +9.14% in the quarter, outperforming the Investment Grade Credit Index return of +8.28%. For the fiscal year as of June 30, 2020, Prudential (credit) returned +9.25% versus +9.26% for the Investment Grade Credit Index.
- **SSgA LI Treasury (governments)** returned +0.23% in the quarter, less than the +0.74% return for its NYC - Treasury Agency plus five index benchmark. For the fiscal year as of June 30, 2020, SSgA (governments) returned +17.01% versus +17.08% for the NYC - Treasury Agency plus five index benchmark.

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- The second quarter brought notable stabilization to Fixed Income markets through the Fed's implementation of numerous fiscal and monetary programs that flooded the US markets with liquidity. It should be noted, though, that the ongoing spread of Covid-19 cases, mixed economic data, and an upcoming US presidential election will keep investors on their toes for the foreseeable future. Investment grade credit spreads continue to tighten off their March crisis wiles, ending the quarter at 150 bps compared to March's 373 bps, though they are still about 50 bps wider than pre-crisis levels. High yield credit spreads experienced similar tightening, ending the quarter at 626 bps compared to March's 1100 bps, though current spreads are still almost double as compared to January of this year.
- Equities posted their strongest quarter since 1998 and Investment Grade Corporate Bonds outperformed Treasuries by 8.5% while High Yield bested Treasuries by 9.7%. Throughout the quarter, corporations issued record amounts of debt, reaching a milestone of \$1 trillion by May. What started out as only a mix of the highest-quality borrowers bringing new bond sales quickly expanded to riskier sectors such as cruise lines and casinos. For the most part, demand was robust, often allowing issuers to boost the size of their offerings and cut borrowing costs while improving liquidity within a broad range of sectors.
- **SSGA 1-10 Yr. Treasury/ Agency** returned +0.43% in the quarter, versus the FTSE USBIG Treasury/Agency 1-10 Yr. Index return of +0.58%. For the fiscal year as of June 30, 2020, the SSgA 1-10 Yr. Treasury Index returned +7.02%, versus the FTSE USBIG Treasury/Agency 1-10 Yr. return of +6.99%.
- **SSgA 1 -3 Yr. Treasury Index** returned +0.13% in the quarter, versus the FTSE USBIG Treasury 1 -3 Yr. Index return of +0.27%. For the fiscal year as of June 30, 2020, the SSgA 1-3 Yr. Treasury Index returned +4.00%, versus the FTSE USBIG Treasury 1 -3 Yr. Index return of +4.06%.
- **Taplin, Canida & Habacht** returned +9.86% in the quarter versus +8.28% for the Investment Grade Credit Index. For the fiscal year as of June 30, 2020, Taplin, Canida & Habacht returned +10.25%, outperforming the Investment Grade Credit Index of +9.26%.
- Security selection was the largest positive contributor to performance in the quarter as liquidity returned to markets and valuations recovered; in particular selection within the energy, and automotive sectors added to returns, while selection within the technology and insurance sectors detracted from returns. The overweight to corporate versus non-corporate credit added to relative returns as corporates outperformed the benchmark. Yield curve management had a positive contribution to portfolio returns in the quarter despite a limited move in interest rates.
- In the second quarter the lower weighting to BBBs subtracted from relative returns as that segment outperformed. The portfolio did increase this allocation modestly during the quarter.

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Enhanced Yield Fixed Income & Bank Loans Commentary

As of June 30, 2020, Enhanced Yield Fixed Income & Bank Loans was \$511.5 million or 7.4% of the NYBERS Total Fund.

- **Mackay Shields** returned +10.80% in the quarter versus +10.14% for Bloomberg Barclays US High Yield – 2% Issuer Cap Index. For the fiscal year as of June 30, 2020, Mackay Shields returned +2.55% versus -0.00% for the Bloomberg Barclays US High Yield – 2% Issuer Cap Index.
- Selection and positioning in the Energy sector was the largest contributor to relative returns over the quarter. Specifically, purchases of fallen angel credits in exploration and production and gas distribution added to returns as this segment significantly outperformed. In addition, natural gas producers held in the portfolio also rebounded sharply. An overweight to Schaeffler Group in the Auto Parts and Equipment sector also helped returns as the bonds recovered during the quarter.
- The portfolio's positions in Exide Technologies detracted from returns in the Diversified Capital Goods sector as the bonds underperformed the broader market. GenOn Energy also detracted from returns in the Electric-Integrated sector. An underweight to the Ford Motor Company detracted from returns as the bonds performed well.

- **Nomura** returned +10.18% in the quarter versus +10.14% for Bloomberg Barclays US High Yield – 2% Issuer Cap Index. For the fiscal year to date as of June 30, 2020, Nomura returned -0.69% versus -0.00% for the Bloomberg Barclays US High Yield – 2% Issuer Cap Index.
- The portfolio's overweight to credit risk was a key contributor to outperformance as the market rally transitioned from quality-led to risk-led. Strong credit selection in BBs and off-benchmark BBBs also helped relative performance, while negative credit selection in single-Bs slightly detracted from relative performance. From a sector perspective, top contributors included security selection in Metals/Mining Excluding Steel, Packaging, and Integrated Energy, and underweight to Cable & Satellite TV. Relative sector detractors included Banking, Hotels, and the Auto subsectors.
- Top issuer contributors included Taseko Mines and First Quantum Minerals, both copper mining companies that benefitted from rising copper prices due to demand from China and supply issues in South America. Issuer detractors included Staples, TransDigm, and some Midstream names like EQM and DCP. For example, Staples continued to suffer in Q2 as COVID-19 shutdowns continued to impact business to business office supply orders and fulfillment costs. However, in mid-June the company released Q1 results with better-than-expected topline numbers,

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Through June 30, 2020

which indicates the company could recovery. While leverage is up, it's expected Staples should be able to grow its market share with strong execution through the crisis.

Enhanced Yield Fixed Income & Bank Loans Managers

- **Barings** returned +7.33% during the quarter, underperforming the +9.71% return of the Credit Suisse Leveraged Loan Index. For the fiscal year to date as of June 30, 2020, Barings returned -3.08% versus -2.27% for the Credit Suisse Leveraged Loan Index.
- Sector selection was the primary contributor to the shortfall in comparative performance. Two primary negative contributors together accounted for almost half of the quarter's underperformance. The largest of which was the negative contribution from a very modest cash position which averaged 2.4% for the quarter. The second largest was the comparative performance of the energy sector which the fund was underweight, 1.39% versus 2.55%. While the difference may seem quite small by comparison any amount of underweight in this sector would have resulted in a meaningful underperformance as the CSLLI Energy sector returned 26.43% for the quarter. The sector performance for the portfolio of 15.02% was still outstanding relative to the overall market returns but clearly did not keep pace with the of the market sector returns.
- The portfolio statistics reflect the dramatic rally in the second quarter following the huge market sell-off in the first. The average price of the portfolio increased by 8.13 points to 90.97% of par although still short of the 97.19% of par at the end of the fourth quarter 2019. The average portfolio yield to a three-year life at quarter-end fell sharply to 7.12% from 11.25% at the end of the first quarter. The average portfolio spread was essentially unchanged at +335 basis points. The three-year discount margin ended June at 656 basis points compared to March's 1012 basis points and 455 basis points at year-end.

TIPS, ETI, Cash Commentary

As of June 30, 2020, Fixed Income – TIPS, ETI and Cash was \$453.36 million or 6.6% of the NYBERS Total Fund.

Fixed Income – TIPS Managers

- **SSgA (TIPS)** returned +4.26% in the quarter, above the +4.24% return for its Barclays Global Inflation Linked Index. For the fiscal year to date as of June 30, 2020, SSgA (TIPS) returned +8.36%, versus the +8.28% return for the Barclays Global Inflation Linked Index.

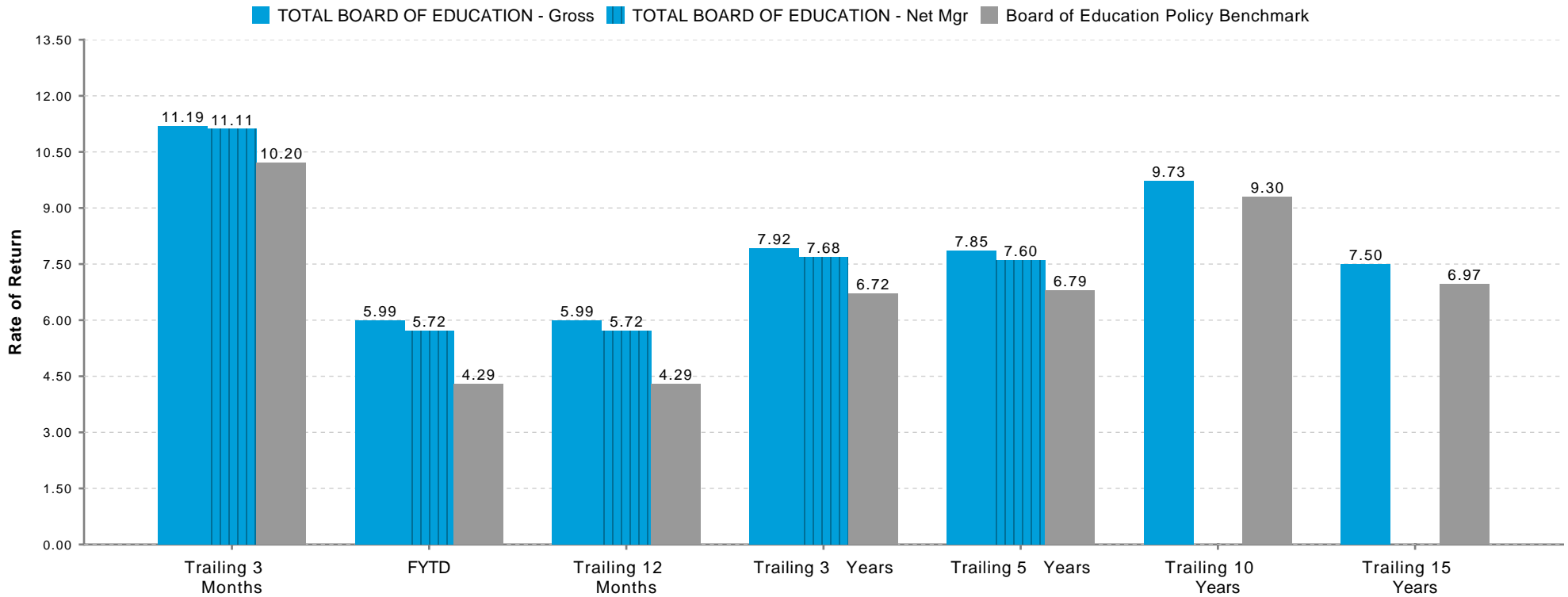
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Market Value (Billions)

\$6.8

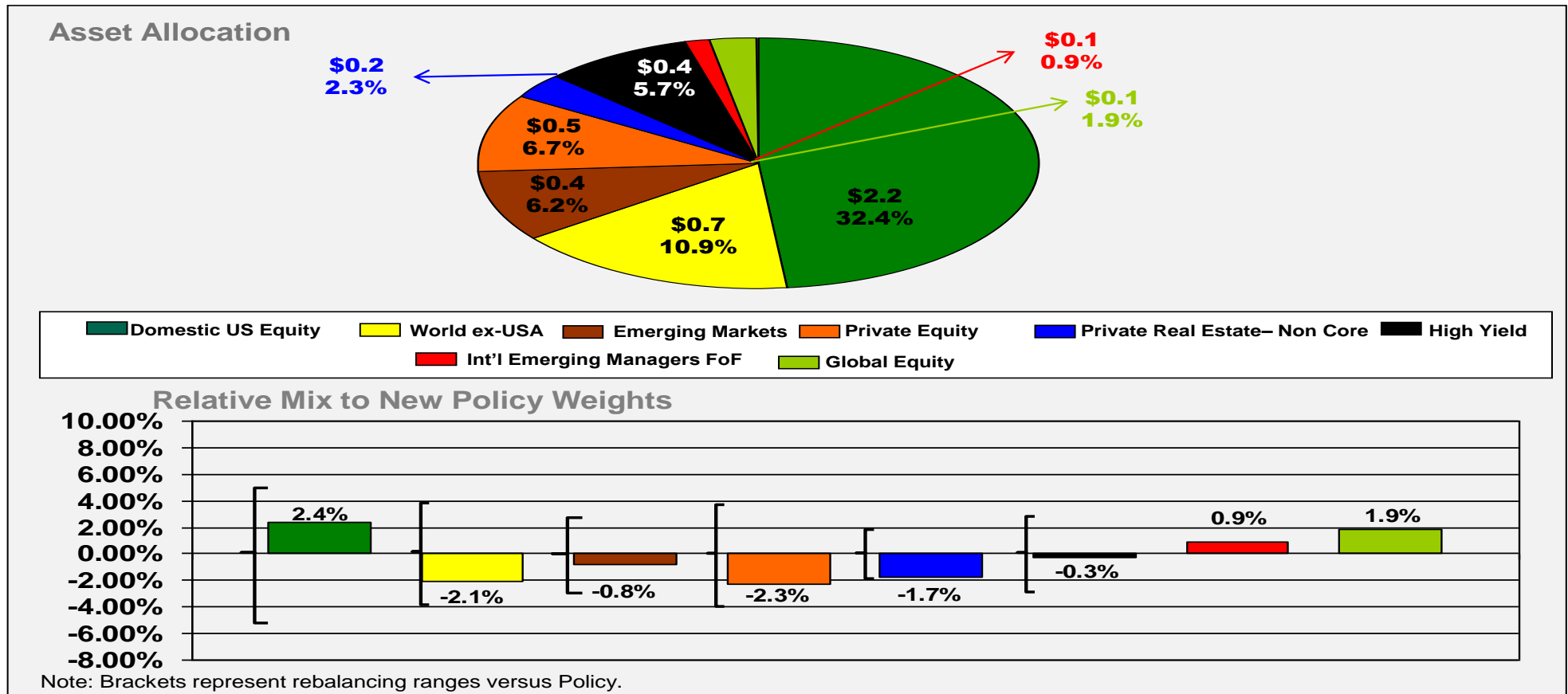
TOTAL BOARD OF EDUCATION



	Plan 3 Years	Benchmark 3 Years	Plan 5 Years	Benchmark 5 Years	Plan 10 Years	Benchmark 10 Years
Standard Deviation						
TOTAL BOARD OF EDUCATION	9.1	9.3	7.8	8.5	8.7	8.8

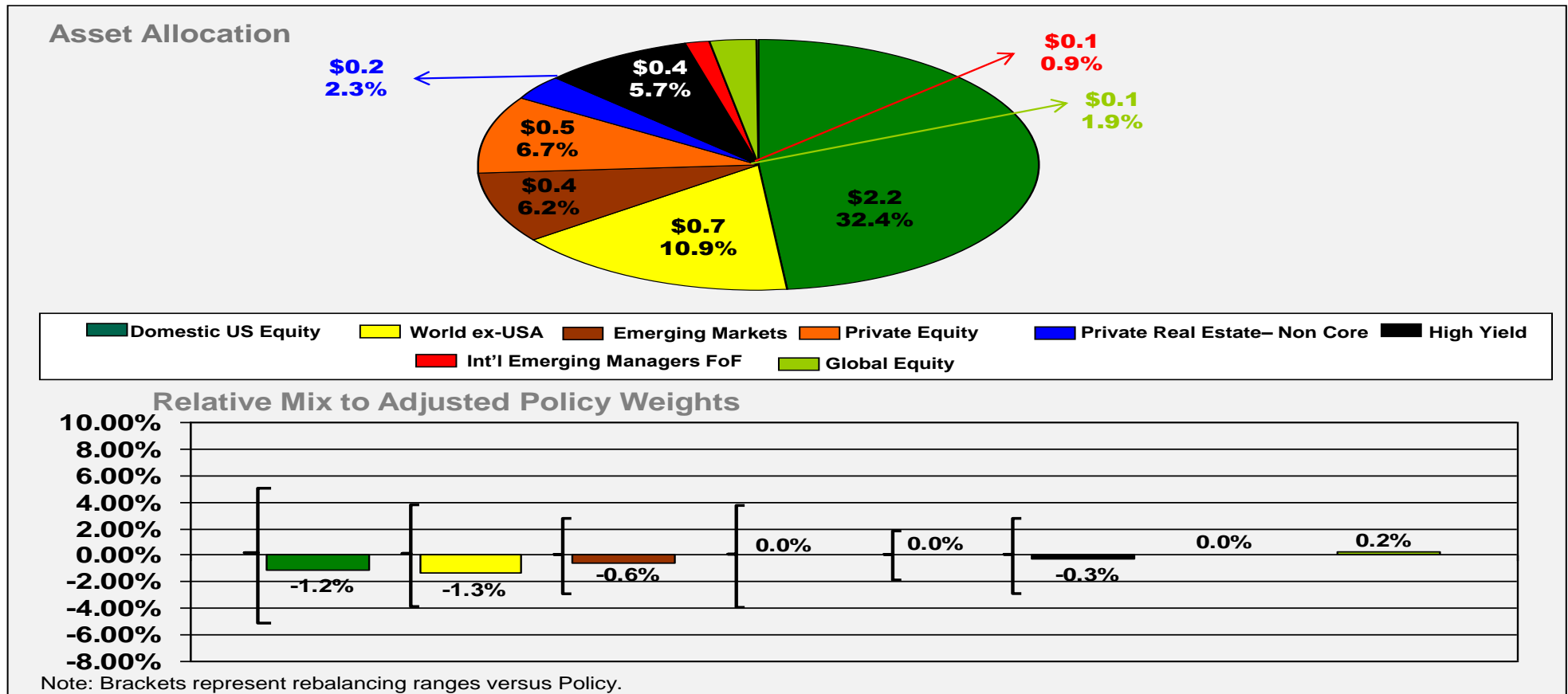


Portfolio Asset Allocation – Growth





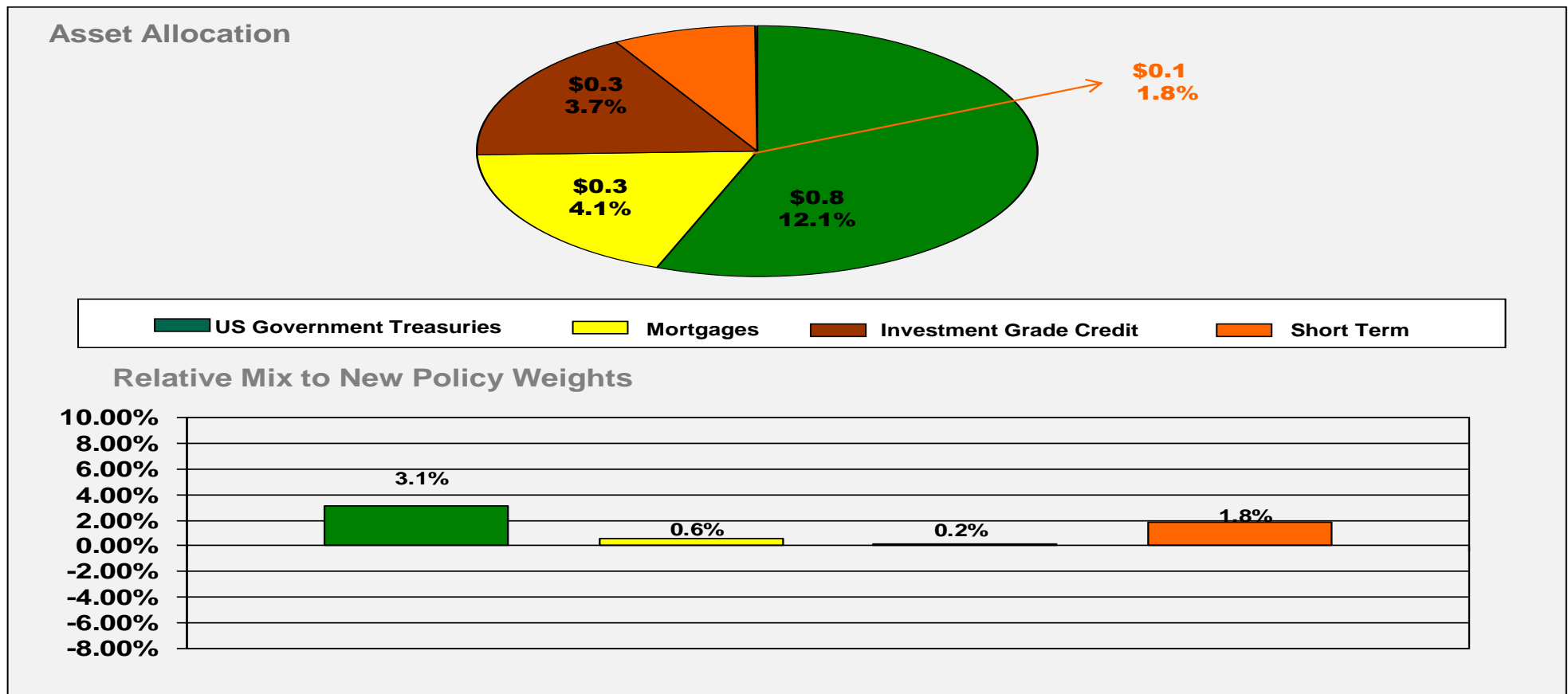
Portfolio Asset Allocation – Growth



Note: On June 30, 2020 BERS' combined Fixed Income and Cash portfolios have a duration of 6.3 years. The duration of the Barclays US Aggregate Index was 6 years on that date.

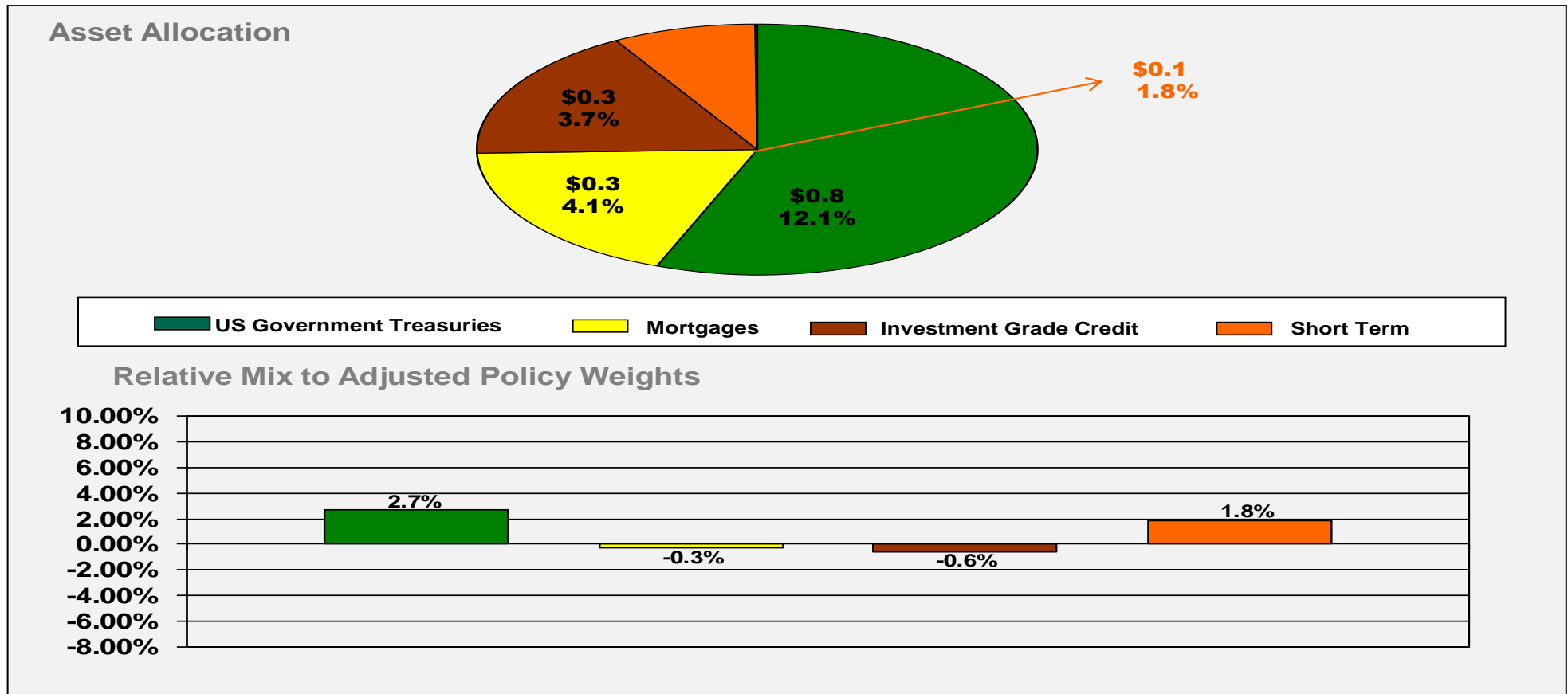


Portfolio Asset Allocation – Deflation Protection





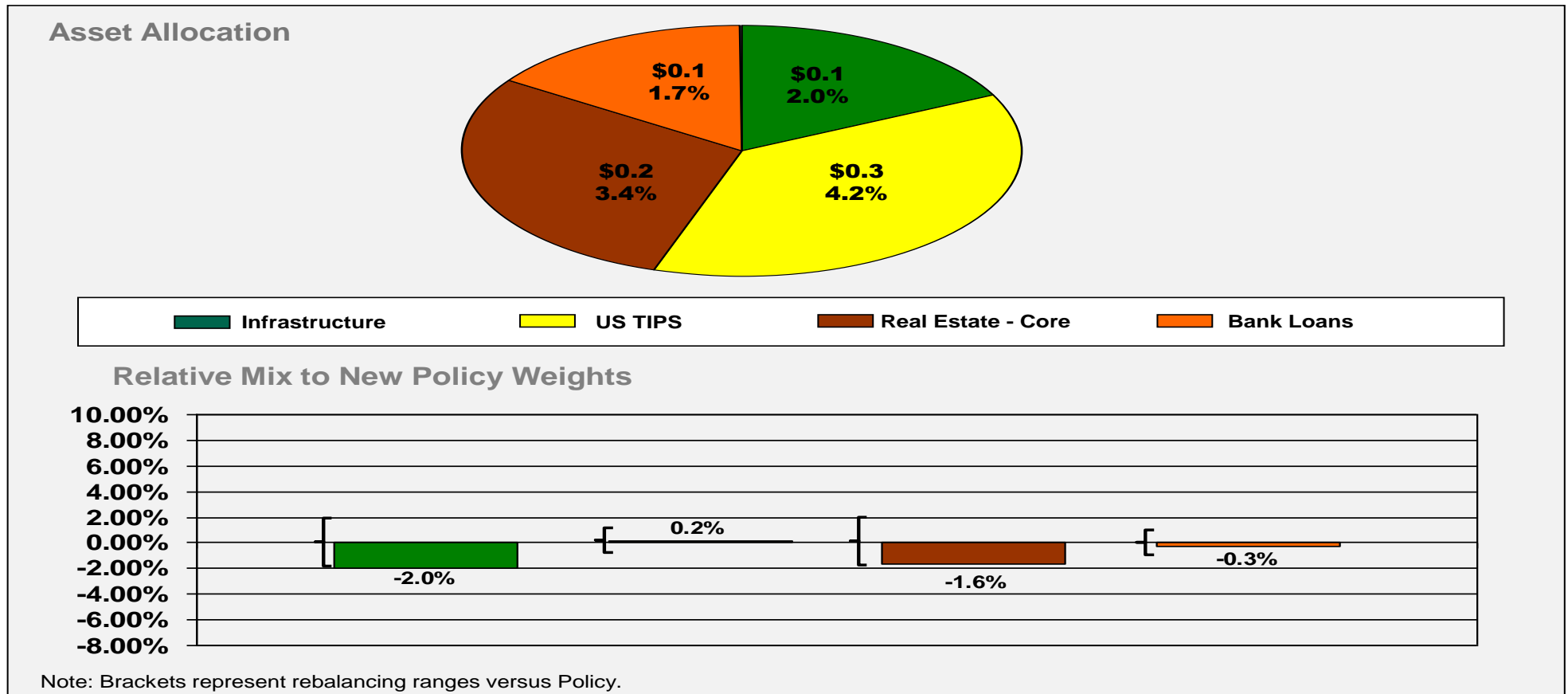
Portfolio Asset Allocation – Deflation Protection



Note: On June 30, 2020 BERS' combined Fixed Income and Cash portfolios have a duration of 6.3 years. The duration of the Barclays US Aggregate Index was 6 years on that date.

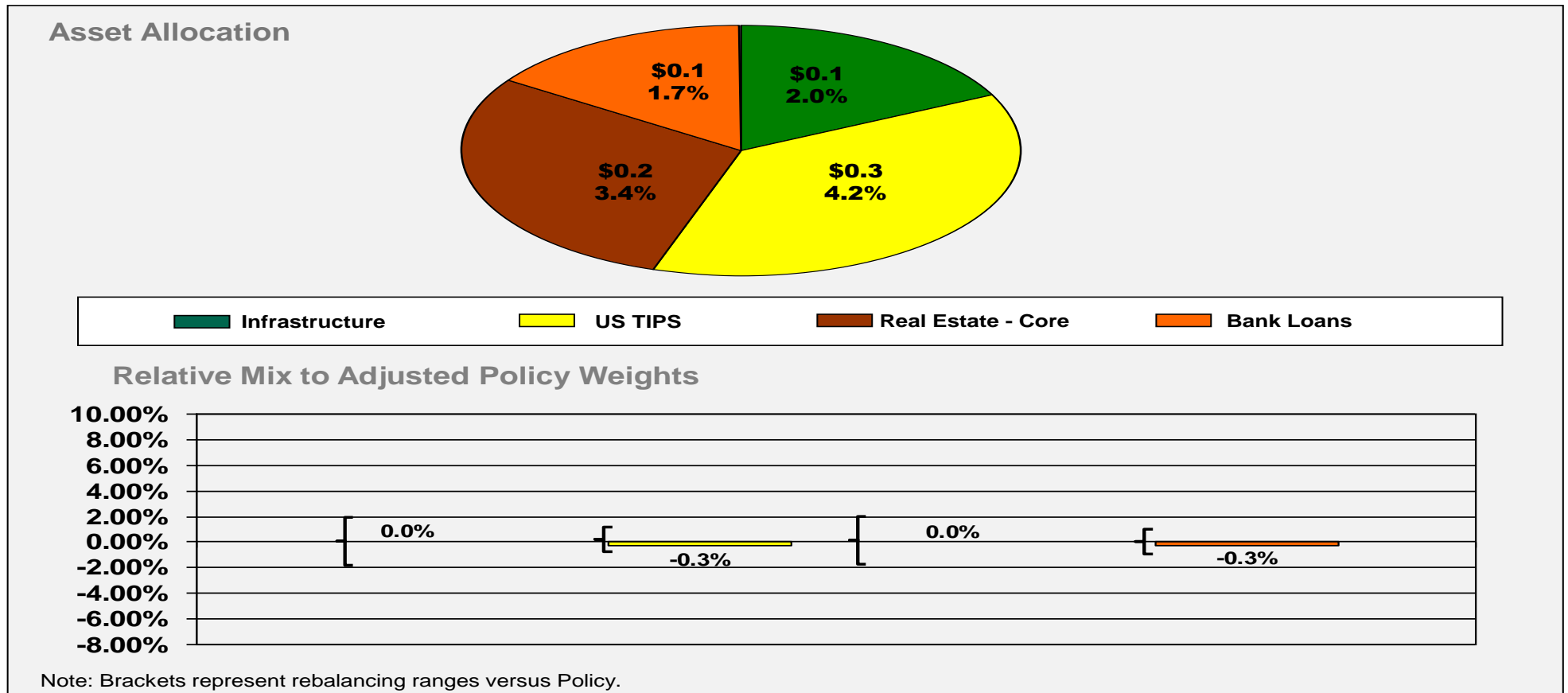


Portfolio Asset Allocation – Inflation Protection

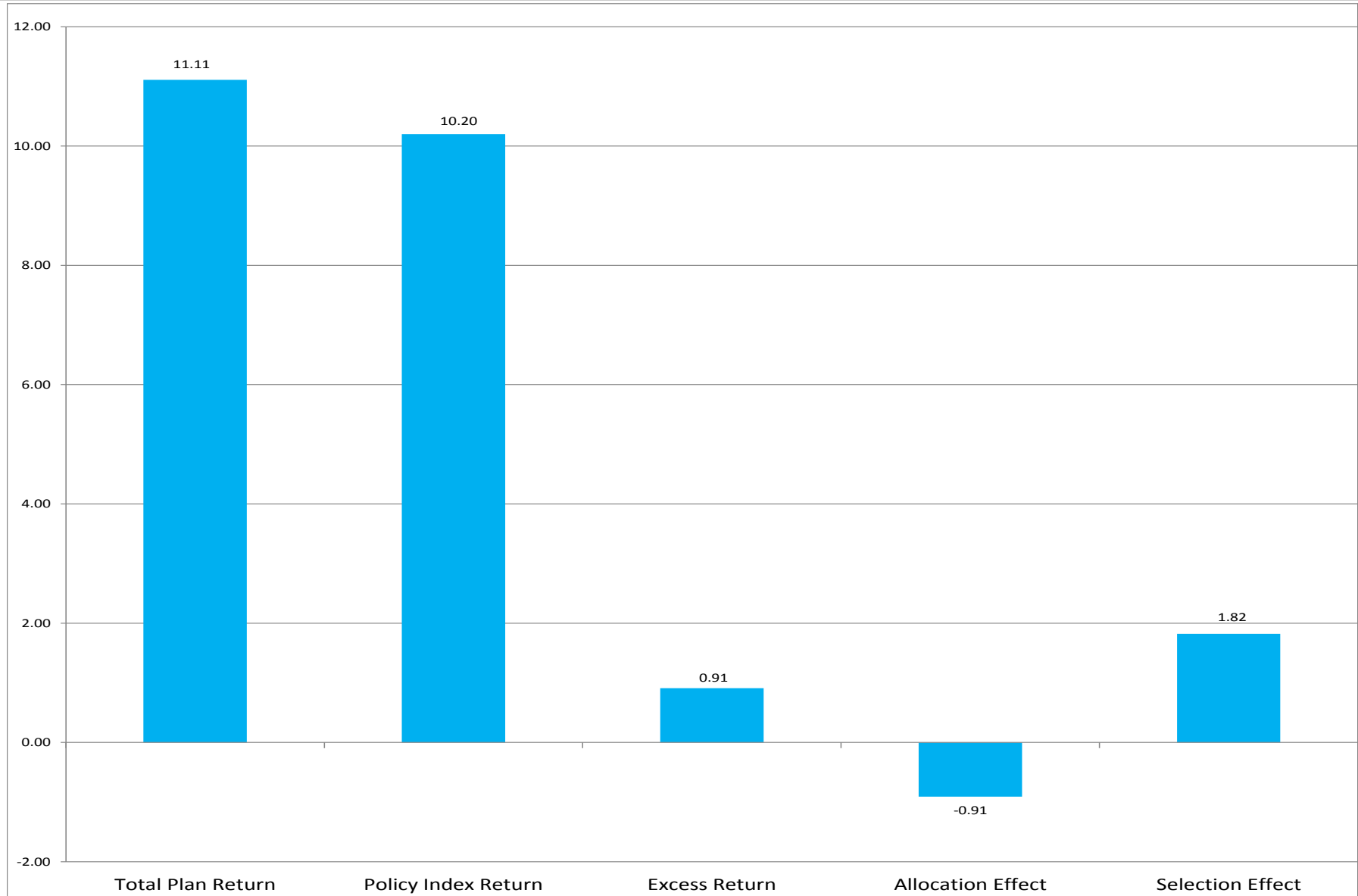


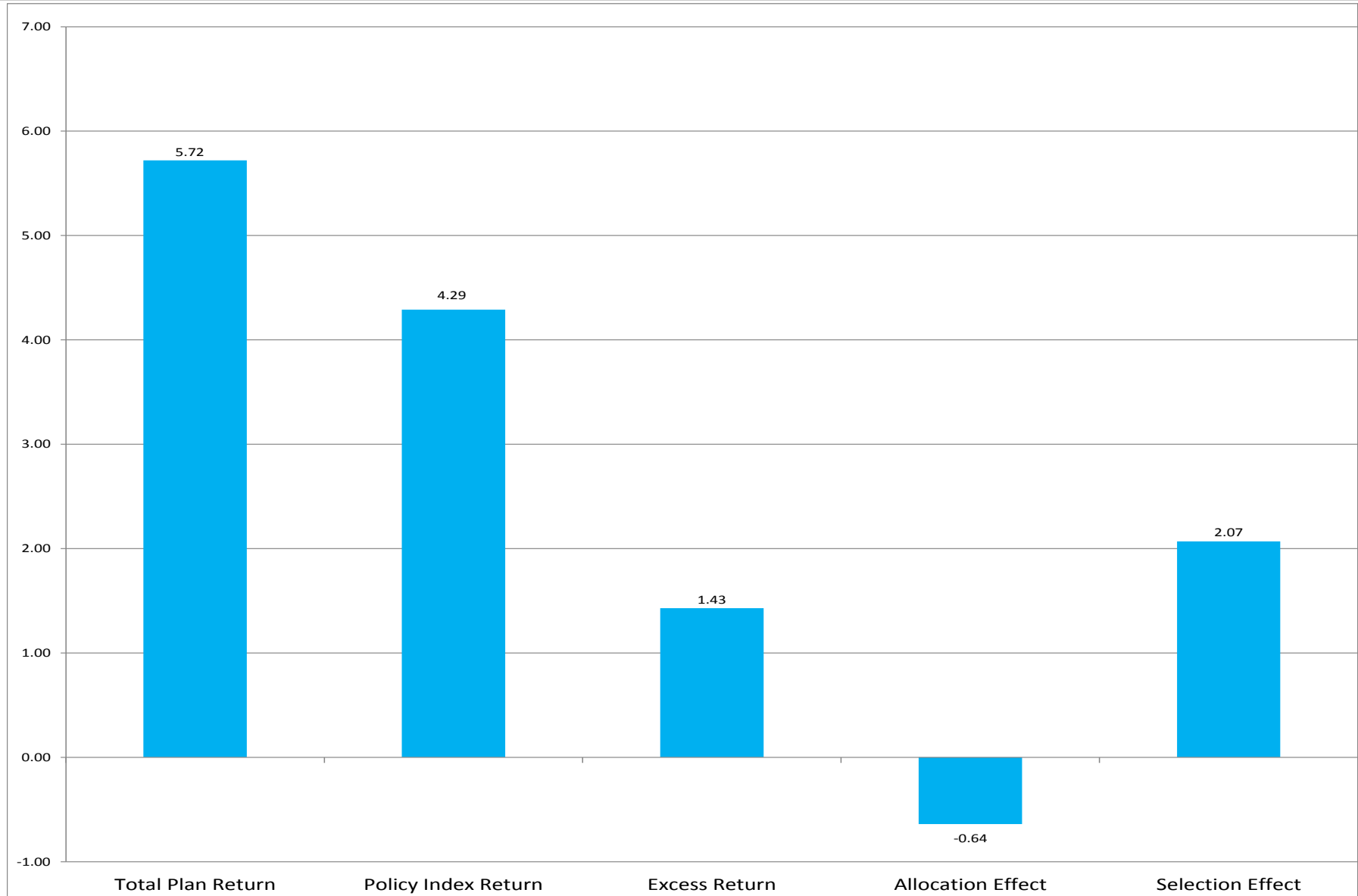


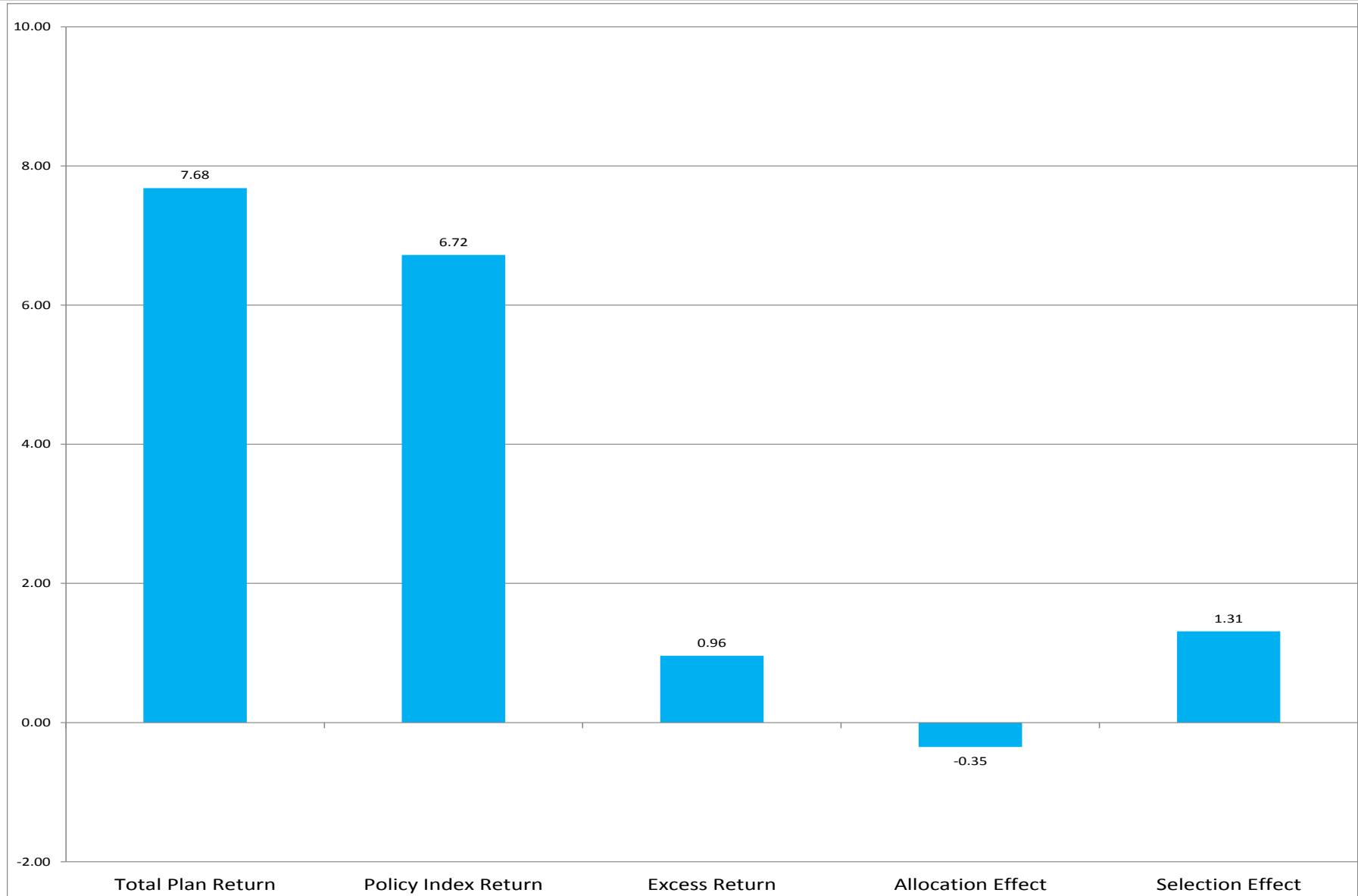
Portfolio Asset Allocation – Inflation Protection



Note: On June 30, 2020 BERS' combined Fixed Income and Cash portfolios have a duration of 6.3 years. The duration of the Barclays US Aggregate Index was 6 years on that date.









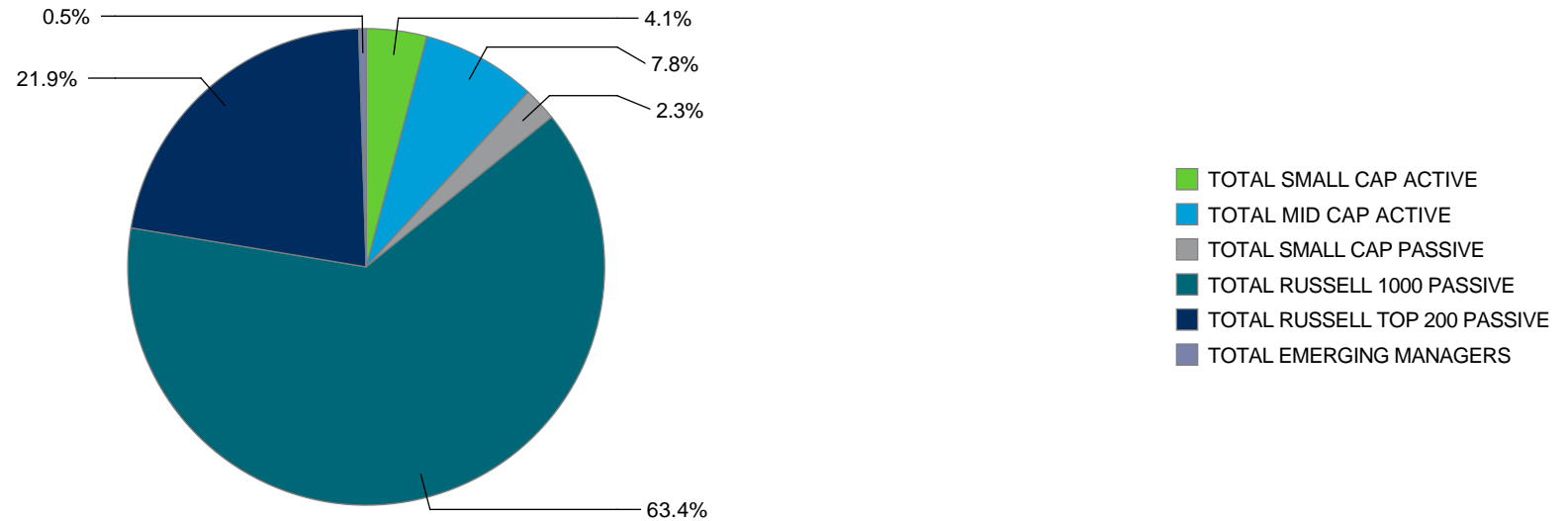
Allocation Effect - Asset Class Breakdown				
	<u>Quarter</u>	<u>FYTD</u>	<u>3 Years</u>	<u>Benchmark</u>
TOTAL BOARD OF EDUCATION	-0.91	-0.64	-0.35	Board of Education Policy Benchmark
TOTAL DOMESTIC EQUITY	-0.19	-0.16	-0.10	RUSSELL 3000
TOTAL WORLD ex-USA	-0.06	-0.05	-0.02	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	0.01	0.00	-0.01	MSCI AC WORLD
TOTAL EMERGING MARKETS	-0.07	-0.07	-0.07	MSCI Emerging Markets
TOTAL INTERNATIONAL FOF	0.00	0.00	0.00	MSCI ACWI Ex US IMI Net
TOTAL PRIVATE EQUITY	0.01	-0.08	-0.03	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	-0.38	-0.07	-0.08	FTSE USBIG Treasury 1-3 Y Index
TOTAL ACTIVE GOVERNMENT	0.00	-0.07	0.03	NYC - Treasury Agency Plus Five
TOTAL INVESTMENT GRADE CREDIT	0.00	-0.04	-0.04	NYC - Investment Grade Credit
TOTAL MORTGAGES	-0.02	-0.03	0.00	FTSE MORTGAGE INDEX
TOTAL ETI	0.00	0.00	0.00	ETI Custom Benchmark
TOTAL HIGH YIELD	0.00	0.06	0.04	High Yield Custom Benchmark
TOTAL BANK LOANS	0.00	0.01	0.00	Credit Suisse Lev Loan Index
TOTAL TIPS MANAGERS	-0.02	0.00	-0.01	BBG BARC Gbl Inf-Lk: US TIPS (Dly)
TOTAL CASH	-0.20	-0.10	-0.07	

Selection Effect - Asset Class Breakdown				
	<u>Quarter</u>	<u>FYTD</u>	<u>3 Years</u>	<u>Benchmark</u>
TOTAL BOARD OF EDUCATION	1.82	2.07	1.31	Board of Education Policy Benchmark
TOTAL DOMESTIC EQUITY	0.05	0.11	0.13	RUSSELL 3000
TOTAL WORLD ex-USA	0.99	1.33	0.80	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	0.09	0.23	0.10	MSCI AC WORLD
TOTAL EMERGING MARKETS	-0.09	-0.19	-0.15	MSCI Emerging Markets
TOTAL INTERNATIONAL FOF	0.01	0.02	0.01	MSCI ACWI Ex US IMI Net
TOTAL PRIVATE EQUITY	0.98	0.57	0.23	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	0.07	-0.01	0.03	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE NON-CORE	-0.22	-0.07	0.07	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	-0.05	0.03	0.07	CPI + 4%
TOTAL US TREASURY SHORT TERM	-0.01	0.00	0.00	FTSE USBIG Treasury 1-3 Y Index
TOTAL ACTIVE GOVERNMENT	-0.05	0.00	0.00	NYC - Treasury Agency Plus Five
TOTAL INVESTMENT GRADE CREDIT	0.04	0.01	0.01	NYC - Investment Grade Credit
TOTAL MORTGAGES	0.04	-0.01	0.00	FTSE MORTGAGE INDEX
TOTAL ETI	0.00	0.00	0.00	ETI Custom Benchmark
TOTAL HIGH YIELD	0.02	0.05	0.01	High Yield Custom Benchmark
TOTAL BANK LOANS	-0.04	-0.02	-0.01	Credit Suisse Lev Loan Index
TOTAL TIPS MANAGERS	0.00	0.00	0.00	BBG BARC Gbl Inf-Lk: US TIPS (Dly)
TOTAL CASH	0.00	0.01	0.00	

Total Domestic Equity Asset Allocations: June 30, 2020



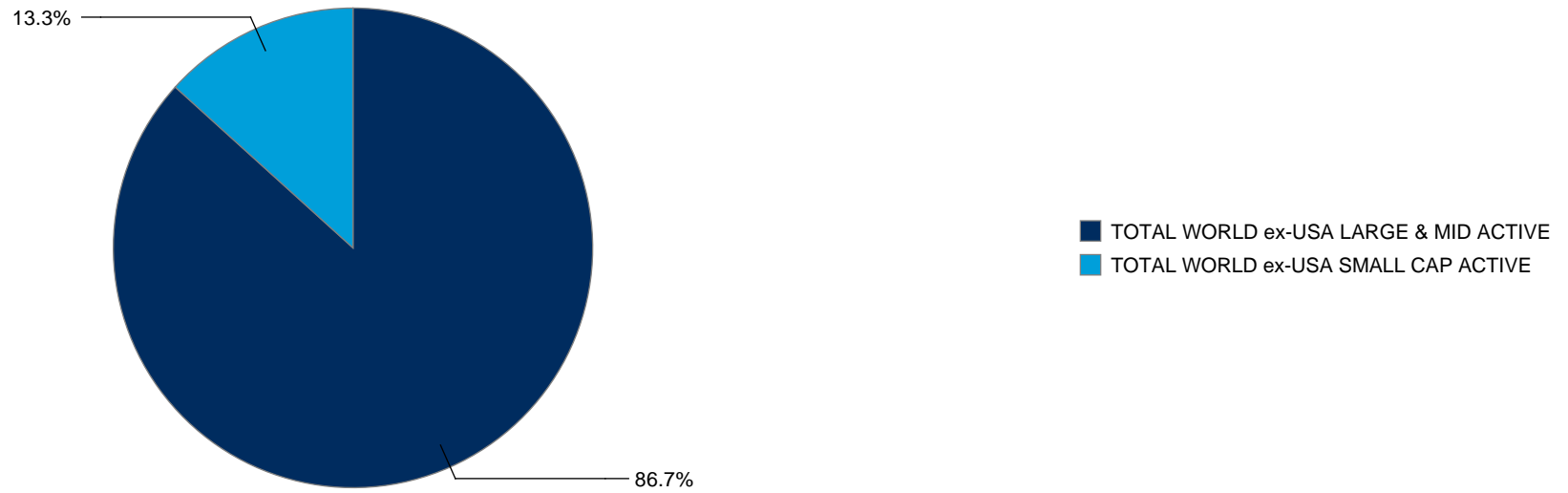
	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL DOMESTIC EQUITY	\$2.2	32.4



	<u>Policy Weight</u>	<u>Actual Weight</u>	<u>Under/Over Weight</u>	<u>Quarterly Returns</u>		
				<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL SMALL CAP ACTIVE	3.9	4.1	0.1	33.7	25.4	8.2
TOTAL MID CAP ACTIVE	7.0	7.8	0.8	24.6	24.6	0.0
TOTAL SMALL CAP PASSIVE	2.6	2.3	(0.3)	19.1	25.4	(6.3)
TOTAL RUSSELL 1000 PASSIVE	68.0	63.5	(4.5)	21.8	21.8	(0.1)
TOTAL RUSSELL TOP 200 PASSIVE	18.0	21.9	3.9	20.9	20.9	(0.0)
TOTAL EMERGING MANAGERS	0.5	0.5	0.0	25.0	25.4	(0.4)



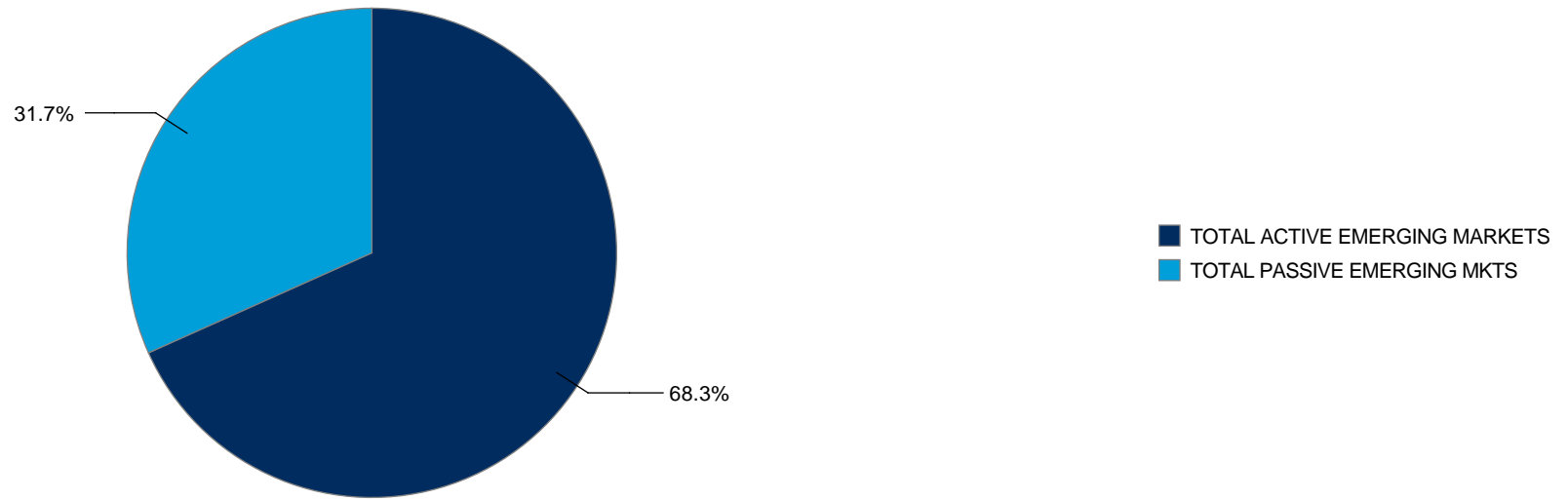
	<u>Market Value (Millions)</u>	<u>% of Plan</u>
TOTAL WORLD ex-USA	\$740.8	10.9



	<u>Asset Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL WORLD ex-USA LARGE & MID ACTIVE	86.74	26.62	15.34	11.28
TOTAL WORLD ex-USA SMALL CAP ACTIVE	13.26	21.17	20.83	0.34
TOTAL WORLD ex-USA	100.00	25.86	16.21	9.65



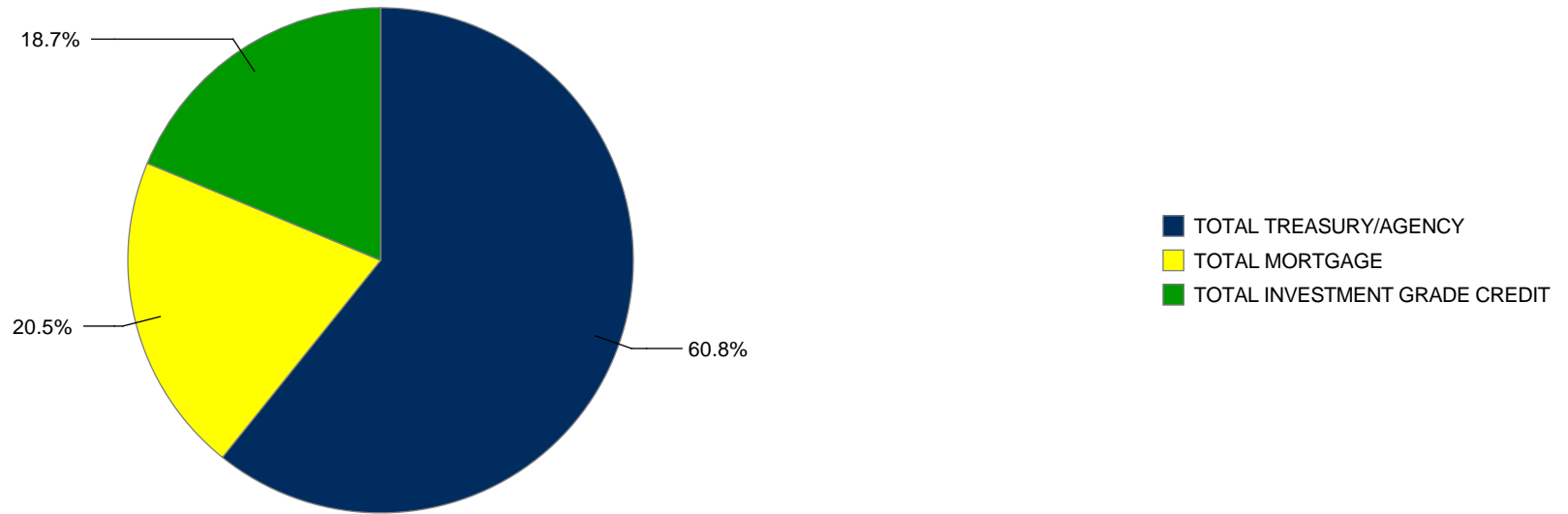
	<u>Market Value (Millions)</u>	<u>% of Plan</u>
TOTAL EMERGING MARKETS	\$421.1	6.2



	<u>Asset Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL ACTIVE EMERGING MARKETS	68.27	15.96	18.08	(2.12)
TOTAL PASSIVE EMERGING MARKETS	31.73	17.64	18.08	(0.44)
TOTAL EMERGING MARKETS	100.00	16.47	18.08	(1.61)



	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL STRUCTURED + ETI	\$1.4	20.0



	<u>Policy Weight</u>	<u>Asset Weight</u>	<u>Under/Over Weight</u>	<u>Quarterly Returns</u>		
				<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL TREASURY/AGENCY	61.54	60.74	(0.80)	0.21	0.74	(0.54)
TOTAL MORTGAGE	19.23	20.52	1.29	1.41	0.32	1.09
TOTAL INVESTMENT GRADE CREDIT	19.23	18.74	(0.49)	9.48	8.28	1.20

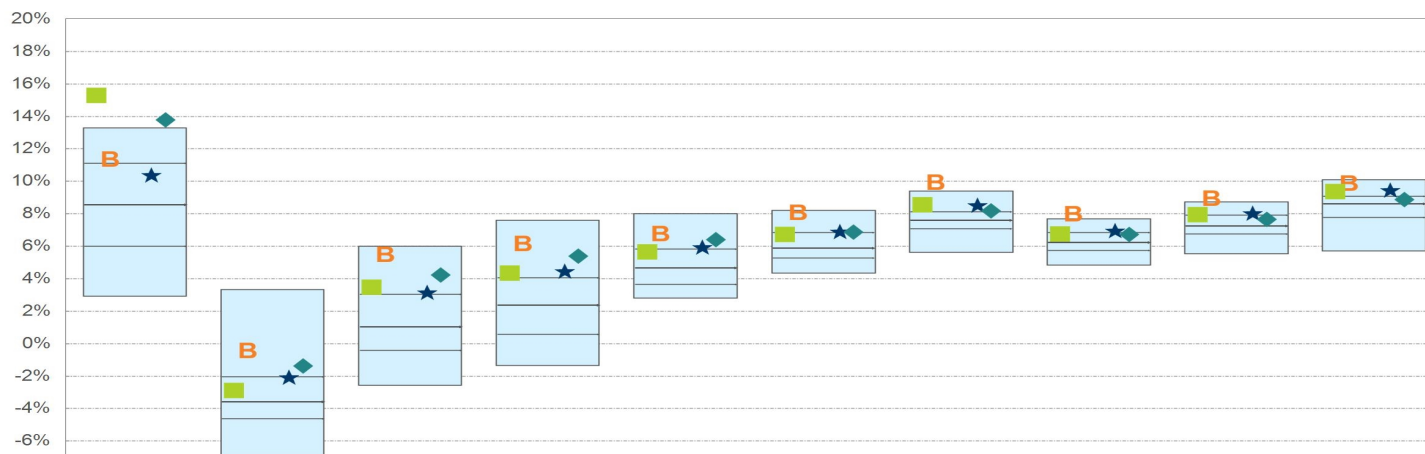


Through June 30, 2020



City of New York Performance Comparison

Total Returns of Master Trusts - Public : Plans > \$1 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	13.28	3.32	6.00	7.61	8.02	8.22	9.41	7.68	8.73	10.09
25th	11.10	-2.05	3.04	4.05	5.84	6.83	8.12	6.84	7.91	9.09
50th	8.57	-3.58	1.04	2.37	4.68	5.90	7.60	6.24	7.24	8.62
75th	6.01	-4.64	-0.42	0.58	3.65	5.28	7.07	5.74	6.77	7.77
95th	2.91	-6.98	-2.56	-1.36	2.81	4.35	5.61	4.85	5.54	5.70
No. Of Obs	63	62	59	56	51	51	51	51	51	49
B Total System - BOE	11.19 (21)	-0.60 (13)	5.32 (13)	5.99 (15)	6.61 (17)	7.92 (7)	9.79 (1)	7.84 (1)	8.78 (3)	9.73 (7)
★ Board of Ed Policy Ben	10.20 (31)	-2.24 (28)	2.98 (25)	4.29 (23)	5.78 (25)	6.72 (28)	8.35 (19)	6.79 (26)	7.87 (25)	9.29 (19)
■ Public Mkt Equiv 25	15.12 (1)	-3.07 (45)	3.30 (18)	4.17 (23)	5.48 (32)	6.55 (30)	8.38 (19)	6.59 (38)	7.76 (32)	9.19 (23)
◆ Public Mkt Equiv 35	13.60 (4)	-1.56 (20)	4.07 (16)	5.21 (15)	6.22 (17)	6.69 (28)	8.00 (26)	6.54 (38)	7.49 (40)	8.71 (41)

Wilshire Trust Universe Comparison Service® (TUCS®)

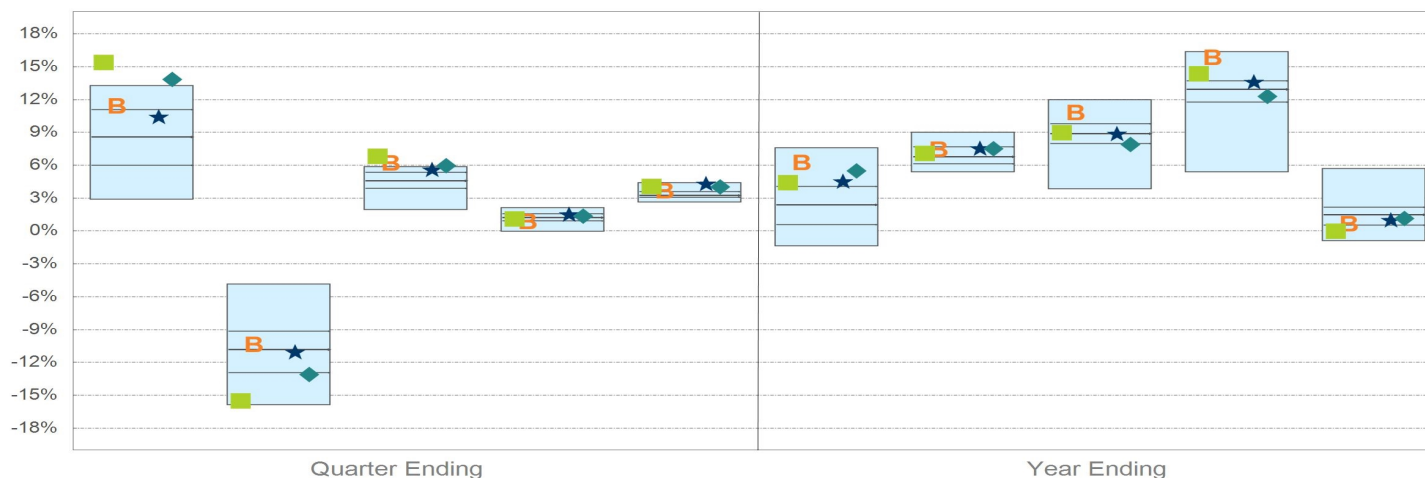


Through June 30, 2020



City of New York Performance Comparison

Total Returns of Master Trusts - Public : Plans > \$1 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	13.28	-4.83	5.86	2.14	4.40	7.61	9.00	12.01	16.38	5.71
25th	11.10	-9.13	5.34	1.58	3.61	4.05	7.68	9.79	13.72	2.17
50th	8.57	-10.82	4.57	1.24	3.27	2.37	6.79	8.89	12.92	1.48
75th	6.01	-12.96	3.89	0.91	3.08	0.58	6.14	7.98	11.79	0.52
95th	2.91	-15.85	1.95	-0.02	2.66	-1.36	5.40	3.86	5.41	-0.89
No. Of Obs	63	62	60	59	54	56	54	55	55	55
B Total System - BOE	11.19 (21)	-10.60 (48)	5.95 (2)	0.64 (81)	3.42 (36)	5.99 (15)	7.23 (32)	10.59 (8)	15.60 (5)	0.41 (76)
★ Board of Ed Policy Ben	10.20 (31)	-11.29 (55)	5.34 (25)	1.27 (43)	4.09 (8)	4.29 (23)	7.30 (30)	8.63 (55)	13.39 (26)	0.75 (61)
■ Public Mkt Equiv 25	15.12 (1)	-15.79 (94)	6.57 (1)	0.84 (78)	3.83 (13)	4.17 (23)	6.81 (48)	8.70 (51)	14.09 (13)	-0.30 (86)
◆ Public Mkt Equiv 35	13.60 (4)	-13.35 (78)	5.72 (13)	1.09 (64)	3.77 (17)	5.21 (15)	7.25 (32)	7.64 (78)	12.03 (67)	0.89 (57)

Wilshire Trust Universe Comparison Service® (TUCS®)



Through June 30, 2020

**BOARD OF EDUCATION 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	1,918.29	587.60	-	3.06	1,031.48	5.38	1,619.08	8.44
Small Cap Active:	-	-	-	-	-	-	-	-
Small Cap Growth	-	-	-	-	-	-	-	-
Small Cap Value	-	-	-	-	-	-	-	-
Small Cap Core	-	-	-	-	-	-	-	-
Small Cap Fundamental Index	-	-	-	-	-	-	-	-
Mid Cap Active:	160.35	477.99	-	29.81	1,031.48	64.33	1,509.47	-
Mid Cap Growth	-	-	-	-	-	-	-	-
Mid Cap Value	-	-	-	-	-	-	-	-
Mid Cap Core	160.35	477.99	-	29.81	1,031.48	64.33	1,509.47	94.14
Russell 1000 Fundamental	-	-	-	-	-	-	-	-
Legato (Emerging Manager- Equity)	11.62	57.78	-	49.73	-	-	57.78	49.73
U.S. Environmental Managers	-	-	-	-	-	-	-	-
Total US Active Equities	171.97	535.77	-	31.16	1,031.48	59.98	1,567.25	91.14
Small Cap Passive:	-	-	-	-	-	-	-	-
Small Cap Passive	143.82	6.07	-	0.42	-	-	6.07	0.42
Mid Cap Passive:	-	-	-	-	-	-	-	-
Mid Cap Passive	-	-	-	-	-	-	-	-
Russell / S&P Passive:	-	-	-	-	-	-	-	-
Russell 1000 Growth Passive	-	-	-	-	-	-	-	-
Russell 1000 Value Passive	-	-	-	-	-	-	-	-
Russell 1000 Core Passive	1,192.47	23.49	-	0.20	-	-	23.49	0.20
Passive Russell 3000	-	-	-	-	-	-	-	-
Passive S&P 500	-	-	-	-	-	-	-	-
Passive Russell Top 200	410.04	22.27	-	0.54	-	-	22.27	0.54
Total US Passive Equities	1,746.32	51.83	-	0.30	-	-	51.83	0.30

Actual Fees Incurred

Through June 30, 2020

**BOARD OF EDUCATION 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	1,235.23	3,563.45	-	28.85	-	-	3,563.45	28.85
Global Equity	99.14	534.38	-	53.90	-	-	534.38	53.90
Active Total Global Equities	99.14	534.38	-	53.90	-	-	534.38	53.90
Active Total World Ex USA:	733.95	1,755.03	-	23.91	-	-	1,755.03	23.91
World Ex-USA Large & Mid Active	621.01	1,428.69	-	23.01	-	-	1,428.69	23.01
World Ex-USA Small Cap Active	112.93	326.34	-	28.90	-	-	326.34	28.90
Total World Ex USA	0.01	-	-	-	-	-	-	-
Total Progress Intl.	-	-	-	-	-	-	-	-
NON-U.S. Activist	-	-	-	-	-	-	-	-
NON-U.S. Environmental Managers	-	-	-	-	-	-	-	-
Active Emerging Markets	303.26	1,010.48	-	33.32	-	-	1,010.48	33.32
International Fund of Funds	63.59	199.33	-	31.35	-	-	199.33	31.35
Total Active International Equities	1,100.80	2,964.85	-	26.93	-	-	2,964.85	26.93
Int'l Passive Equities:								
World Ex-USA Small Cap Passive	-	-	-	-	-	-	-	-
World Ex-USA Large & Mid Cap Passive	-	-	-	-	-	-	-	-
Passive Global	-	-	-	-	-	-	-	-
Passive Emerging Markets	134.43	36.73	-	2.73	-	-	36.73	2.73
Total Int'l Passive Equities	134.43	36.73	-	2.73	-	-	36.73	2.73
REITS Active Equities	-	-	-	-	-	-	-	-
Total Equities	3,252.66	4,685.43	-	14.40	-	-	5,716.91	17.58
INVESTMENT STYLE (FIXED INCOME)								



Through June 30, 2020

**BOARD OF EDUCATION 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 Fixed Income	2,218.20	1,870.13	-	8.43	-	-	1,870.13	8.43
Structured Program:	1,270.26	491.60	-	3.87	-	-	491.60	3.87
Government Treas/Agency Sector	852.21	220.60	-	2.59	-	-	220.60	2.59
Long Duration Treasury	-	-	-	-	-	-	-	-
Mortgage Sector	195.43	83.92	-	4.29	-	-	83.92	4.29
Investment Grade Credit Sector	222.62	187.09	-	8.40	-	-	187.09	8.40
Developing Managers	-	-	-	-	-	-	-	-
Emerging Managers	-	-	-	-	-	-	-	-
TIPS:	450.16	14.40	-	0.32	-	-	14.40	0.32
Active TIPS Managers	-	-	-	-	-	-	-	-
Passive TIPS Managers	450.16	14.40	-	0.32	-	-	14.40	0.32
High Yield	282.88	882.15	-	31.18	-	-	882.15	31.18
Bank Loans	121.56	401.49	-	33.03	-	-	401.49	33.03
Convertible Bonds	-	-	-	-	-	-	-	-
ETI - Access - RBC	9.52	17.43	-	18.31	-	-	17.43	18.31
ETI - AFL-CIO HIT	16.25	63.05	-	38.80	-	-	63.05	38.80
Other ETI Programs	9.99	-	-	-	-	-	-	-
Short Term (Internal)	57.57	-	-	-	-	-	-	-
Total Public Markets	5,470.86	6,555.56	-	11.98	1,031.48	1.89	7,587.04	13.87



Through June 30, 2020

**BOARD OF EDUCATION 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	395.84	7,100.56	1,677.69	221.76	3,969.36	100.28	12,747.61	322.04
Private Real Estate	350.06	3,531.65	1,751.94	150.93	1,861.70	53.18	7,145.29	204.12
Infrastructure	103.14	1,825.58	421.32	90.88	361.55	35.05	2,608.44	105.51
Opportunistic Fixed Income	-	-	-	-	-	-	-	-
Total Private Markets	849.04	12,457.79	3,850.95	192.08	6,192.61	72.94	22,501.34	265.02
Total Overall	6,319.90	19,013.35	3,850.95	36.18	7,224.09	11.43	30,088.38	47.61

The overall carried interest and incentive fees paid by BERS in Fiscal Year : 11.43 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.



Through June 30, 2020

**NYC BOARD OF EDUCATION RETIREMENT SYSTEM
SECURITIES LENDING INCOME
June 30, 2020**

	U. S. FIXED INCOME	U. S. EQUITY	INTERNATIONAL EQUITY	TOTAL
1989	70,000	-	-	70,000
1990	79,000	-	-	79,000
1991	111,000	-	-	111,000
1992	122,000	11,000	-	133,000
1993	79,000	32,000	15,000	126,000
1994	93,000	77,000	20,000	190,000
1995	112,000	93,000	12,000	217,000
1996	99,000	76,000	27,000	202,000
1997	101,000	126,000	40,000	267,000
1998	111,000	170,000	60,000	341,000
1999	159,000	263,000	100,000	522,000
2000	193,000	310,000	97,000	600,000
2001	295,000	208,000	159,000	662,000
2002	209,000	143,000	152,000	504,000
2003	153,000	158,000	195,000	506,000
2004	226,000	255,000	174,000	655,000
2005	384,000	479,000	217,000	1,080,000
2006	303,000	734,000	246,000	1,283,000
2007	593,000	1,208,000	272,000	2,073,000
2008	2,514,000	2,266,000	451,000	5,231,000
2009	698,000	1,416,000	367,000	2,481,000
2010	246,000	729,000	326,000	1,301,000
2011	340,000	943,000	599,000	1,882,000
2012	516,000	1,144,000	495,000	2,155,000
2013	349,000	1,325,000	446,000	2,120,000
2014	287,000	512,000	1,387,000	2,186,000
2015	338,000	429,000	1,985,000	2,752,000
2016	418,000	1,585,000	1,685,000	3,688,000
2017	686,000	1,015,000	1,215,000	2,916,000
2018	582,738	682,039	954,109	2,218,886
2019	319,440	712,602	788,647	1,820,689
2020 (6 months)	183,694	196,898	221,884	602,477
Since Inception	<u>10,969,873</u>	<u>17,298,539</u>	<u>12,706,641</u>	<u>40,975,053</u>



**New York City
Board of Education Retirement System**

Appendix A

Consolidated Performance Report

Consolidated Performance Report



Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	FYE 2019	2019	2018	2017	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
SYSTEM RETURN SUMMARY															
5 BERS-TOTAL PORTFOLIO - GROSS	6,827	100.00	11.19	5.99	(0.60)	7.23	19.37	(2.81)	19.09	5.99	7.92	7.85	9.73	8.74	07/01/1987
BERS - ESTIMATED INVESTMENT FEES			(0.08)	(0.27)	(0.12)	(0.24)	(0.31)	(0.17)	(0.27)	(0.27)	(0.24)	(0.25)			
EST MANAGEMENT FEES - PUBLIC MARKET (ACCRUAL)			(0.04)	(0.11)	(0.07)	(0.11)	(0.12)	(0.10)	(0.11)	(0.11)	(0.11)	(0.11)			
EST MANAGEMENT FEES - ALTERNATIVE MARKETS (CASH)			(0.04)	(0.16)	(0.05)	(0.13)	(0.19)	(0.07)	(0.16)	(0.16)	(0.13)	(0.14)			
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
BERS-TOTAL PORTFOLIO - NET MGR			11.11	5.72	(0.72)	6.99	19.06	(2.98)	18.82	5.72	7.68	7.60			
BOARD OF EDUCATION POLICY BENCHMARK			10.20	4.29	(2.24)	7.30	19.07	(3.19)	16.63	4.29	6.72	6.79	9.30		
EXCESS RETURN			0.91	1.44	1.52	(0.31)	(0.01)	0.21	2.18	1.44	0.95	0.81	0.43		
EQUITY RETURN DETAIL															
18 BERS-TOTAL EQUITY (INCLUDES ALTERNATIVES) - GROSS	4,541	66.53	15.27	4.88	(3.27)	7.00	24.41	(4.41)	25.58	4.88	8.84	9.04	11.84	9.14	08/01/1993
ESTIMATED INVESTMENT FEES			(0.11)	(0.34)	(0.16)	(0.31)	(0.42)	(0.21)	(0.34)	(0.34)	(0.31)	(0.31)			
EST MANAGEMENT FEES			(0.11)	(0.34)	(0.16)	(0.31)	(0.42)	(0.21)	(0.34)	(0.34)	(0.31)	(0.31)			
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
BERS-TOTAL EQUITY (INCLUDES ALTERNATIVES) - NET MGR			15.16	4.54	(3.42)	6.69	23.99	(4.61)	25.24	4.54	8.53	8.73			
26 BERS-TOTAL EQUITY - GROSS	3,562	52.18	22.36	5.28	(3.41)	5.40	28.11	(9.30)	27.41	5.28	8.21	8.51	11.50	8.20	04/01/2004
ESTIMATED INVESTMENT FEES			(0.08)	(0.17)	(0.09)	(0.17)	(0.20)	(0.11)	(0.15)	(0.17)	(0.16)	(0.16)			
EST MANAGEMENT FEES			(0.08)	(0.17)	(0.09)	(0.17)	(0.20)	(0.11)	(0.15)	(0.17)	(0.16)	(0.16)			
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
BERS-TOTAL EQUITY - NET MGR			22.29	5.11	(3.50)	5.23	27.91	(9.41)	27.26	5.11	8.06	8.35			
34 BERS-TOTAL DOMESTIC EQUITY - GROSS	2,213	32.42	22.26	6.98	(2.87)	9.03	31.14	(4.61)	21.47	6.98	10.56	10.29	13.84	9.85	09/01/1991
ESTIMATED INVESTMENT FEES			(0.07)	(0.09)	(0.07)	(0.09)	(0.10)	(0.03)	(0.04)	(0.09)	(0.07)	(0.08)			
BERS-TOTAL DOMESTIC EQUITY - NET MGR			22.19	6.89	(2.94)	8.95	31.04	(4.64)	21.43	6.89	10.49	10.21			
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	9.69	
EXCESS RETURN			0.16	0.36	0.54	(0.04)	0.02	0.60	0.29	0.36	0.45	0.17	0.12	0.17	
44 BERS-TOTAL SMALL CAP - GROSS	141	2.07	28.07	(1.99)	(8.45)	(3.27)	25.20	(10.89)	14.47	(1.99)	3.74	5.10	11.00	6.33	04/01/2004
ESTIMATED INVESTMENT FEES			(0.05)	(0.08)	(0.08)	(0.00)	(0.00)	(0.00)	(0.00)	(0.08)	(0.03)	(0.02)			
BERS-TOTAL SMALL CAP - NET MGR			28.03	(2.07)	(8.52)	(3.27)	25.20	(10.90)	14.47	(2.07)	3.71	5.08			
RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	(3.31)	25.52	(11.01)	14.65	(6.63)	2.01	4.29	10.50	7.08	
EXCESS RETURN			2.61	4.55	4.45	0.04	(0.33)	0.12	(0.18)	4.55	1.70	0.80	0.50	(0.75)	
54 BERS-TOTAL MID CAP - GROSS	172	2.52	25.52	0.83	(4.71)	9.09	33.87	(7.09)	25.33	0.83	9.66	10.12	13.14	10/01/2010	
ESTIMATED INVESTMENT FEES			(0.90)	(0.95)	(0.75)	(0.97)	(1.19)	(0.28)	(0.27)	(0.95)	(0.78)	(0.67)			
BERS-TOTAL MID CAP - NET MGR			24.62	(0.12)	(5.46)	8.11	32.68	(7.37)	25.06	(0.12)	8.88	9.45			
RUSSELL MIDCAP (DAILY)			24.61	(2.24)	(9.13)	7.83	30.54	(9.06)	18.52	(2.24)	5.79	6.76	11.25		
EXCESS RETURN			0.01	2.12	3.66	0.29	2.14	1.69	6.54	2.12	3.09	2.69	1.88		
64 BERS-TOTAL RUSSELL 1000 - GROSS	1,405	20.58	21.77	7.49	(2.79)	10.17	31.35		7.49				9.61	04/01/2018	
ESTIMATED INVESTMENT FEES			(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)				(0.00)		
BERS-TOTAL RUSSELL 1000 - NET MGR			21.77	7.48	(2.79)	10.17	31.35		7.48				9.61		
RUSSELL 1000 (DAILY)			21.82	7.48	(2.81)	10.02	31.43		7.48				9.43		
EXCESS RETURN			(0.05)	0.00	0.02	0.15	(0.07)		0.00				0.18		
74 BERS-TOTAL RUSSELL TOP 200 PASSIVE - GROSS	484	7.09	20.89	11.26	(0.41)	10.91	31.67		11.26				11.85	05/01/2018	
ESTIMATED INVESTMENT FEES			(0.00)	(0.01)	(0.00)	(0.01)	(0.00)		(0.01)				(0.01)		
BERS-TOTAL RUSSELL TOP 200 PASSIVE - NET MGR			20.89	11.25	(0.41)	10.90	31.66		11.25				11.84		
RUSSELL TOP 200 INDEX (DAILY)			20.91	11.20	(0.49)	10.89	31.75		11.20				11.82		
EXCESS RETURN			(0.02)	0.05	0.07	0.01	(0.09)		0.05				0.02		

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 DETAIL																
86	BERS-TOTAL EMERGING MANAGER - GROSS	11	0.16	25.14	(7.77)	(13.02)	0.43	23.94	(7.81)	(7.77)	2.18			2.24	05/01/2017	
	ESTIMATED INVESTMENT FEES			(0.15)	(0.46)	(0.21)	(0.50)	(0.62)	(0.46)	(0.46)	(0.51)			(0.45)		
	BERS-TOTAL EMERGING MANAGER - NET MGR			24.99	(8.22)	(13.23)	(0.06)	23.33	(8.27)	(8.22)	1.67			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			(0.43)	(1.60)	(0.26)	3.24	(2.20)	2.74	(1.60)	(0.34)			(0.54)		
96	BERS-TOTAL WORLD ex-USA EQUITY - GROSS	741	10.85	25.93	6.45	(1.11)	(0.87)	26.47	(14.67)	35.49	6.45	7.22	6.93	8.80	7.69	11/01/1992
	ESTIMATED INVESTMENT FEES			(0.08)	(0.26)	(0.12)	(0.24)	(0.31)	(0.21)	(0.32)	(0.26)	(0.26)	(0.26)			
	BERS-TOTAL WORLD ex-USA EQUITY - NET MGR			25.86	6.18	(1.23)	(1.11)	26.16	(14.88)	35.18	6.18	6.96	6.67			
	NYC DEVELOPED EQUITY BENCHMARK			16.21	(5.11)	(11.68)	0.16	22.91	(14.68)	25.65	(5.11)	0.74	2.01	5.71	5.59	
	EXCESS RETURN			9.65	11.29	10.45	(1.27)	3.26	(0.19)	9.53	11.29	6.22	4.66	3.09	2.10	
106	BERS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - GROSS	643	9.41	26.69	7.88	0.38	(0.04)	27.08	(13.90)	35.81	7.88	8.23	7.33	5.78	11/01/2013	
	ESTIMATED INVESTMENT FEES			(0.07)	(0.25)	(0.12)	(0.23)	(0.29)	(0.20)	(0.31)	(0.25)	(0.25)	(0.25)	(0.25)		
	BERS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - NET MGR			26.62	7.63	0.26	(0.27)	26.79	(14.09)	35.51	7.63	7.98	7.08	5.53		
	NYC CUSTOM WORLD EX-USA LG & MID ACT INDEX			15.34	(5.42)	(11.49)	1.29	22.49	(14.09)	25.18	(5.42)	0.81	2.05	1.93		
	EXCESS RETURN			11.28	13.05	11.75	(1.56)	4.30	(0.00)	10.32	13.05	7.17	5.03	3.60		
126	BERS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - GROSS	98	1.44	21.27	(2.72)	(10.60)	(5.96)	22.61	(18.96)	38.82	(2.72)	1.03	5.59	6.68	05/01/2013	
	ESTIMATED INVESTMENT FEES			(0.10)	(0.32)	(0.15)	(0.31)	(0.41)	(0.27)	(0.44)	(0.32)	(0.33)	(0.35)			
	BERS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - NET MGR			21.17	(3.04)	(10.75)	(6.27)	22.21	(19.22)	38.38	(3.04)	0.70	5.25			
	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			0.34	0.96	1.93	0.10	(1.50)	(0.65)	4.91	0.96	0.69	2.04	1.54		
136	BERS-TOTAL EMERGING MARKETS - GROSS	421	6.17	16.54	(5.94)	(11.64)	(0.32)	16.90	(16.14)	39.93	(5.94)	0.11	2.42	3.72	6.99	11/01/1997
	ESTIMATED INVESTMENT FEES			(0.06)	(0.22)	(0.10)	(0.24)	(0.27)	(0.20)	(0.38)	(0.22)	(0.24)	(0.29)			
	BERS-TOTAL EMERGING MARKETS - NET MGR			16.47	(6.16)	(11.75)	(0.56)	16.63	(16.34)	39.55	(6.16)	(0.14)	2.13			
	MSCI EMERGING MARKETS			18.08	(3.39)	(9.78)	1.21	18.42	(14.57)	37.28	(3.39)	1.90	2.86	3.27		
	EXCESS RETURN			(1.61)	(2.77)	(1.96)	(1.76)	(1.79)	(1.77)	2.27	(2.77)	(2.03)	(0.73)	0.45		
146	BERS-TOTAL ACTIVE EMERGING MARKETS - GROSS	287	4.21	16.05	(6.90)	(12.30)	(1.09)	16.09	(16.99)	40.92	(6.90)	(0.68)	2.10	3.53	7.20	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.09)	(0.31)	(0.15)	(0.33)	(0.38)	(0.28)	(0.47)	(0.31)	(0.33)	(0.35)			
	BERS-TOTAL ACTIVE EMERGING MARKETS - NET MGR			15.96	(7.21)	(12.44)	(1.42)	15.71	(17.27)	40.45	(7.21)	(1.02)	1.75			
	MSCI EMERGING MARKETS			18.08	(3.39)	(9.78)	1.21	18.42	(14.57)	37.28	(3.39)	1.90	2.86	3.27	7.10	
	EXCESS RETURN			(2.12)	(3.82)	(2.66)	(2.63)	(2.71)	(2.70)	3.16	(3.82)	(2.91)	(1.11)	0.26	0.10	
156	BERS-TOTAL PASSIVE EMERGING MARKETS - GROSS	134	1.96	17.65	(3.70)	(10.16)	1.44	18.79	(14.45)	37.41	(3.70)	1.84		6.54	12/01/2016	
	ESTIMATED INVESTMENT FEES			(0.01)	(0.02)	(0.01)	(0.02)	(0.03)	0.01	(0.15)	(0.02)	(0.04)		(0.04)		
	BERS-TOTAL PASSIVE EMERGING MARKETS - NET MGR			17.64	(3.72)	(10.16)	1.42	18.76	(14.45)	37.26	(3.72)	1.80		6.50		
	MSCI EMERGING MARKETS			18.08	(3.39)	(9.78)	1.21	18.42	(14.57)	37.28	(3.39)	1.90		6.57		
	EXCESS RETURN			(0.44)	(0.34)	(0.38)	0.21	0.34	0.12	(0.02)	(0.34)	(0.09)		(0.07)		
166	BERS-TOTAL INTERNATIONAL FUND OF FUNDS - GROSS	60	0.88	18.18	(2.01)	(8.43)	0.69	22.67	(14.23)		(2.01)	2.54		3.36	05/01/2017	
	ESTIMATED INVESTMENT FEES			(0.10)	(0.33)	(0.15)	(0.34)	(0.42)	(0.30)		(0.33)	(0.35)		(0.36)		
	BERS-TOTAL INTERNATIONAL FUND OF FUNDS - NET MGR			18.09	(2.34)	(8.58)	0.34	22.25	(14.53)		(2.34)	2.19		3.00		
	MSCI ACWI EX USA IMI NET			16.96	(4.74)	(11.24)	0.26	21.63	(14.76)		(4.74)	0.96		2.01		
	EXCESS RETURN			1.13	2.39	2.66	0.08	0.62	0.23		2.39	1.22		0.99		
176	BERS-TOTAL GLOBAL EQUITY - GROSS	127	1.86	24.86	16.61	6.91	9.85	36.70		16.61				12.16	06/01/2018	
	ESTIMATED INVESTMENT FEES			(0.17)	(0.64)	(0.29)	(0.61)	(0.79)		(0.64)				(0.62)		
	BERS-TOTAL GLOBAL EQUITY - NET MGR			24.69	15.96	6.62	9.24	35.91		15.96				11.54		
	MSCI AC WORLD (DAILY CONST)			19.22	2.11	(6.25)	5.74	26.60		2.11				3.48		
	EXCESS RETURN			5.47	13.85	12.87	3.50	9.31		13.85				8.06		

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 EQUITY RETURN DETAIL																
188	BERS-TOTAL PRIVATE EQUITY (TIME WEIGHTED) - GROSS	457	6.70	(7.70)	4.59	(3.75)	16.26	14.11	20.44	19.22	4.59	13.11	12.76	14.24	7.52	07/01/2006
	ESTIMATED INVESTMENT FEES			(0.20)	(1.06)	(0.40)	(1.13)	(1.45)	(0.76)	(1.36)	(1.06)	(1.11)	(1.23)			
	BERS-TOTAL PRIVATE EQUITY (TIME WEIGHTED) - NET MGR			(7.90)	3.52	(4.15)	15.13	12.66	19.69	17.86	3.52	11.99	11.53			
	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	11.11	
	EXCESS RETURN			12.36	9.90	8.24	3.12	6.66	(1.37)	(4.36)	9.90	4.88	2.60	0.54	(3.58)	
198	BERS-TOTAL PRIVATE REAL ESTATE (TIME WEIGHTED) - GROSS	385	5.63	(3.68)	1.64	(1.30)	9.92	7.61	11.95	13.57	1.64	8.17	10.21		10.84	12/01/2010
	ESTIMATED INVESTMENT FEES			(0.14)	(0.64)	(0.27)	(0.59)	(0.71)	(0.56)	(0.83)	(0.64)	(0.63)	(0.68)			
	BERS-TOTAL PRIVATE REAL ESTATE (TIME WEIGHTED) - NET MGR			(3.81)	1.00	(1.57)	9.33	6.90	11.40	12.74	1.00	7.53	9.53			
	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		10.74	
	EXCESS RETURN			(2.31)	(1.34)	(1.05)	2.82	1.47	2.97	5.01	(1.34)	1.77	2.12		0.10	
208	BERS-TOTAL INFRASTRUCTURE (TIME WEIGHTED) - GROSS	138	2.02	(0.84)	8.72	0.51	12.55	13.63	14.77	24.82	8.72	13.64	13.26		14.02	12/01/2013
	ESTIMATED INVESTMENT FEES			(0.37)	(1.71)	(0.69)	(1.11)	(1.45)	(1.06)	(2.74)	(1.71)	(1.61)	(1.62)		(2.88)	
	BERS-TOTAL INFRASTRUCTURE (TIME WEIGHTED) - NET MGR			(1.21)	7.01	(0.18)	11.44	12.17	13.70	22.08	7.01	12.04	11.64		11.15	
	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			(1.90)	2.27	(1.68)	5.69	5.79	7.69	15.88	2.27	6.22	5.98		5.64	

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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	
FIXED INCOME RETURN DETAIL																
220	BERS-TOTAL FIXED INCOME - GROSS	2,285	33.47	3.53	8.25	5.44	7.20	9.46	(0.33)	4.30	8.25	5.40	4.68	4.72	7.71	02/01/1980
	ESTIMATED INVESTMENT FEES			(0.02)	(0.10)	(0.05)	(0.10)	(0.10)	(0.09)	(0.12)	(0.10)	(0.10)	(0.11)			
	EST MANAGEMENT FEES			(0.02)	(0.10)	(0.05)	(0.10)	(0.10)	(0.09)	(0.12)	(0.10)	(0.10)	(0.11)			
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	BERS-TOTAL FIXED INCOME - NET MGR			3.50	8.15	5.39	7.10	9.36	(0.42)	4.18	8.15	5.30	4.57			
228	BERS-FIXED INCOME (ex ALTERNATIVE CREDIT & CASH) - GROSS	1,651	24.18	2.47	10.82	8.23	7.60	9.00	(0.45)	3.93	10.82	6.07	4.93	4.50	11/01/2013	
	ESTIMATED INVESTMENT FEES			(0.01)	(0.04)	(0.02)	(0.04)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)	(0.06)	(0.06)	
	EST MANAGEMENT FEES			(0.01)	(0.04)	(0.02)	(0.04)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)	(0.06)	(0.06)	
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	BERS-FIXED INCOME (ex ALTERNATIVE CREDIT & CASH) - NET MGR			2.46	10.78	8.21	7.56	8.96	(0.49)	3.88	10.78	6.03	4.88	4.45		
236	BERS-TOTAL STRUCTURED FIXED INCOME - GROSS	1,320	19.34	2.11	11.52	8.87	8.23	9.16	(0.36)	4.19	11.52	6.31	5.20	4.81	7.59	01/01/1985
	ESTIMATED INVESTMENT FEES			(0.01)	(0.05)	(0.02)	(0.04)	(0.05)	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)			
	BERS-TOTAL STRUCTURED FIXED INCOME - NET MGR			2.10	11.47	8.85	8.19	9.12	(0.40)	4.14	11.47	6.26	5.15			
	NYC CUSTOM STRUCTURED INDEX-BERS			2.28	13.00	10.12	9.47	10.27	(0.21)	4.48	13.00	7.11				
	EXCESS RETURN			(0.18)	(1.53)	(1.27)	(1.28)	(1.15)	(0.19)	(0.34)	(1.53)	(0.84)				
246	BERS-TOTAL GOVERNMENT - GROSS	829	12.14	0.22	13.52	11.44	8.02	8.16	(0.23)	2.82	13.52	6.67	5.06	4.82	7.28	05/01/1987
	ESTIMATED INVESTMENT FEES			(0.01)	(0.04)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)			
	BERS-TOTAL GOVERNMENT - NET MGR			0.21	13.48	11.42	7.99	8.13	(0.25)	2.79	13.48	6.64	5.03			
	CUSTOM GOVERNMENT BENCHMARK - BOE			0.74	17.08	14.63	10.38	10.40	(0.05)	4.66	17.08	8.58	6.46	5.55		
	EXCESS RETURN			(0.54)	(3.60)	(3.21)	(2.39)	(2.27)	(0.20)	(1.86)	(3.60)	(1.94)	(1.43)	(0.73)		
256	BERS-TOTAL MORTGAGE - GROSS	236	3.46	1.46	5.94	3.64	6.67	6.97	1.04	3.11	5.94	4.24	3.63	3.51	5.66	08/01/1993
	ESTIMATED INVESTMENT FEES			(0.01)	(0.04)	(0.02)	(0.05)	(0.05)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)			
	BERS-TOTAL MORTGAGE - NET MGR			1.45	5.90	3.62	6.63	6.93	1.00	3.06	5.90	4.19	3.58			
	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	5.19	
	EXCESS RETURN			1.13	(0.06)	0.02	0.24	0.25	(0.01)	0.59	(0.06)	0.08	0.29	0.42	0.46	
266	BERS-TOTAL INVESTMENT GRADE CREDIT - GROSS	256	3.74	9.50	9.81	5.10	10.23	14.68	(2.55)	6.70	9.81	6.42	5.85	5.67	7.30	04/01/1987
	ESTIMATED INVESTMENT FEES			(0.02)	(0.09)	(0.04)	(0.09)	(0.10)	(0.08)	(0.08)	(0.09)	(0.09)	(0.08)			
	BERS-TOTAL INVESTMENT GRADE CREDIT - NET MGR			9.48	9.72	5.05	10.14	14.58	(2.63)	6.61	9.72	6.33	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			1.20	0.45	0.04	0.01	1.18	(0.73)	0.58	0.45	0.22	0.29	0.51		
276	BERS-TOTAL TIPS - GROSS	287	4.20	4.26	8.36	6.10	4.84	8.45	(1.28)	3.05	8.36	5.09	3.78	3.62	4.16	06/01/2005
	ESTIMATED INVESTMENT FEES			(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)			
	BERS-TOTAL TIPS - NET MGR			4.26	8.36	6.10	4.83	8.44	(1.29)	3.04	8.36	5.09	3.78			
	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			0.01	0.08	0.10	(0.00)	0.02	(0.03)	0.04	0.08	0.04	0.03	0.10	0.15	
286	BERS-TOTAL TARGETED INVESTMENTS (NO CASH) - GROSS	44	0.64	1.26	8.34	5.21	9.46	9.87	1.08	4.37	8.34	5.73	5.23	4.48	6.82	12/01/1984
	ESTIMATED INVESTMENT FEES			(0.04)	(0.19)	(0.09)	(0.25)	(0.21)	(0.25)	(0.26)	(0.19)	(0.23)	(0.25)	(0.30)	(0.13)	
	BERS-TOTAL TARGETED INVESTMENTS (NO CASH) - NET MGR			1.21	8.15	5.12	9.21	9.66	0.83	4.11	8.15	5.51	4.98	4.17	6.69	
	BERS CUSTOM BENCHMARK (NO CASH)			1.59	7.37	4.87	7.20	7.67	0.85	3.19	7.37	4.84	3.97	3.58		
	EXCESS RETURN			(0.38)	0.78	0.25	2.01	1.99	(0.02)	0.92	0.78	0.67	1.01	0.59		

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															
298 BERS-TOTAL HIGH YIELD - GROSS	392	5.74	10.58	1.26	(2.78)	7.41	14.08	(1.64)	7.17	1.26	3.72	4.61	6.98	5.80	08/01/1997
ESTIMATED INVESTMENT FEES			(0.09)	(0.32)	(0.15)	(0.34)	(0.37)	(0.30)	(0.36)	(0.32)	(0.33)	(0.34)			
BERS-TOTAL HIGH YIELD - NET MGR			10.50	0.94	(2.93)	7.07	13.71	(1.94)	6.81	0.94	3.39	4.28			
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	5.75	
EXCESS RETURN			0.36	0.94	0.90	(0.40)	(0.61)	0.40	(0.22)	0.94	0.14	(0.07)	0.64	0.05	
308 BERS- TOTAL BANK LOANS - GROSS	119	1.75	7.41	(2.77)	(5.69)	3.32	8.17	0.71	4.81	(2.77)	1.86	2.64		3.43	12/01/2012
ESTIMATED INVESTMENT FEES			(0.08)	(0.31)	(0.15)	(0.34)	(0.36)	(0.33)	(0.34)	(0.31)	(0.33)	(0.34)			
BERS-TOTAL BANK LOANS - NET MGR			7.33	(3.08)	(5.83)	2.98	7.82	0.38	4.47	(3.08)	1.53	2.30			
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)	4.15	8.17	1.14	4.25	(2.27)	2.13	2.94		3.50	
EXCESS RETURN			(2.38)	(0.81)	(1.07)	(1.17)	(0.36)	(0.76)	0.22	(0.81)	(0.61)	(0.64)		(0.07)	
CASH SUMMARY															
320 Short Term BERS - GROSS	123	1.80	0.04	1.36	0.36	2.10	2.00	1.92	1.10	1.36	1.63	1.21	0.82	1.97	10/01/2000
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 BERS - NET MGR			0.04	1.36	0.36	2.10	2.00	1.92	1.10	1.36	1.63	1.21	0.82		
324 Cash Account	0	0.00													
326 Securities Lending	0	0.00													
328 KKR Cash Account	0	0.00													



**New York City
Board of Education Retirement System**

Appendix B

Public Markets Manager Performance Detail

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
EQUITY SUMMARY										
US EQUITY										
Wasatch-US SCG	90	1.32	33.66		2.88					
RUSSELL 2000 GROWTH DAILY			30.58		(3.06)					
Excess			3.08		5.94					
BlackRock US SCG R2000	0	0.00	30.67	3.50	(2.99)	28.39	(9.14)	22.26	11.29	(1.30)
RUSSELL 2000 GROWTH DAILY			30.58	3.48	(3.06)	28.48	(9.31)	22.17	11.32	(1.38)
Excess			0.08	0.02	0.07	(0.09)	0.17	0.09	(0.02)	0.08
BlackRock US SCV R2000	51	0.75	19.13	(17.27)	(23.43)	22.60	(12.79)	7.34	31.71	(7.38)
RUSSELL 2000 VALUE DAILY			18.91	(17.48)	(23.50)	22.39	(12.86)	7.84	31.74	(7.47)
Excess			0.22	0.21	0.07	0.20	0.08	(0.49)	(0.03)	0.09
Wellington US MCC	172	2.52	24.62	(0.12)	(5.46)	32.68	(7.37)	25.06	12.28	1.76
S&P MID CAP 400			24.07	(6.70)	(12.78)	26.20	(11.08)	16.24	20.74	(2.18)
Excess			0.55	6.58	7.31	6.48	3.71	8.82	(8.45)	3.94
BlackRock US LMC R1000 Core	1,405	20.58	21.77	7.48	(2.79)	31.36				
RUSSELL 1000 (DAILY)			21.82	7.48	(2.81)	31.43				
Excess			(0.05)	0.00	0.02	(0.07)				
SSGA US LMC Top 200 Core	484	7.09	20.89	11.25	(0.41)	31.66				
RUSSELL TOP 200 INDEX (DAILY)			20.91	11.20	(0.49)	31.75				
Excess			(0.02)	0.05	0.07	(0.09)				
FUND OF FUNDS										
BERS-TOTAL FUNDS OF FUNDS	11	0.16	24.99	(8.22)	(13.23)	23.33	(8.27)			
RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	25.52	(11.01)			
Excess			(0.43)	(1.60)	(0.26)	(2.20)	2.74			

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
US EQUITY										
BERS-TOTAL LEGATO	11	0.16	24.99	(8.22)	(13.23)	23.33	(8.27)			
RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	25.52	(11.01)			
Excess			(0.43)	(1.60)	(0.26)	(2.20)	2.74			
NON - US EQUITY										
Sprucegrove WorldxUS LMCC										
Sprucegrove WorldxUS LMCC	282	4.13	11.92	(16.97)	(20.07)	17.55	(13.67)	27.15	11.14	(9.56)
NYC Developed Value Benchmark			15.34	(5.42)	(11.49)	22.49	(14.09)	22.77	5.02	(5.68)
Excess			(3.42)	(11.54)	(8.59)	(4.94)	0.42	4.38	6.12	(3.87)
Baillie Gifford WorldxUS LMCC										
Baillie Gifford WorldxUS LMCC	360	5.28	38.02	31.65	18.92	36.64	(15.35)	44.17	0.70	(3.81)
NYC Developed Growth Benchmark			15.34	(5.42)	(11.49)	22.49	(14.09)	27.77	(3.04)	4.09
Excess			22.68	37.08	30.41	14.15	(1.26)	16.40	3.74	(7.90)
Acadian WorldxUS SCC										
Acadian WorldxUS SCC	73	1.07	20.89	(2.52)	(9.94)	21.82	(19.22)	38.38	6.41	8.68
S&P EPAC Small Cap USD NET			20.83	(4.00)	(12.67)	23.71	(18.58)	33.47	1.34	8.58
Excess			0.06	1.47	2.73	(1.89)	(0.65)	4.91	5.07	0.09
Alger EAFE SCC										
Alger EAFE SCC	25	0.37	21.99	(4.49)	(12.97)					
MSCI EAFE SMALL CAP NET (DAILY)			19.88	(3.52)	(13.11)					
Excess			2.10	(0.97)	0.14					
EMERGING MARKETS										
Acadian EM										
Acadian EM	287	4.21	15.96	(7.21)	(12.44)	15.71	(17.27)	40.45	12.74	(15.14)
MSCI EMERGING MARKETS			18.08	(3.39)	(9.78)	18.42	(14.57)	37.28	11.19	(14.92)
Excess			(2.12)	(3.82)	(2.66)	(2.71)	(2.70)	3.16	1.55	(0.22)
BlackRock MSCI EM Core										
BlackRock MSCI EM Core	134	1.96	17.64	(3.72)	(10.16)	18.76	(14.45)	37.25		
MSCI EMERGING MARKETS			18.08	(3.39)	(9.78)	18.42	(14.57)	37.28		
Excess			(0.44)	(0.34)	(0.38)	0.34	0.12	(0.03)		

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
INTERNATIONAL FOF										
BERS-TOTAL INTERNATIONAL FOF	60	0.88	18.09	(2.34)	(8.58)	22.25	(14.53)			
MSCI ACWI ex USA IMI Net			16.96	(4.74)	(11.24)	21.63	(14.76)			
Excess			1.13	2.39	2.66	0.62	0.23			
BERS-TOTAL INTERNATIONAL FIS										
BERS-TOTAL INTERNATIONAL FIS	60	0.88	18.09	(2.34)	(8.58)	22.25	(14.53)			
MSCI ACWI ex USA IMI Net			16.96	(4.74)	(11.24)	21.63	(14.76)			
Excess			1.13	2.39	2.66	0.62	0.23			
GLOBAL EQUITY										
Morgan Stanley-Global	68	0.99	33.15	27.30	17.65	38.03				
MSCI AC WORLD (Daily Const)			19.22	2.11	(6.25)	26.60				
Excess			13.93	25.19	23.90	11.44				
Fiera-Global	59	0.87	16.26	5.25	(3.70)	33.97				
MSCI World Index			19.36	2.84	(5.77)	27.67				
Excess			(3.10)	2.41	2.07	6.30				
FIXED INCOME SUMMARY										
STRUCTURED FIXED INCOME										
BlackRock Mortgages	236	3.46	1.45	5.90	3.62	6.93	1.00	3.06	2.32	1.73
FTSE MORTGAGE INDEX			0.32	5.96	3.60	6.68	1.01	2.47	1.59	1.56
Excess			1.13	(0.06)	0.02	0.25	(0.01)	0.59	0.73	0.17
Prudential Credit	137	2.00	9.14	9.25	4.90	13.63	(1.95)	6.21	5.86	(0.22)
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			0.86	(0.01)	(0.11)	0.24	(0.05)	0.17	0.30	0.43
Taplin Credit	119	1.74	9.86	10.25	5.23	15.70	(3.42)	7.18	8.02	(3.01)
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			1.58	0.99	0.21	2.30	(1.52)	1.14	2.46	(2.36)

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
SSGA LI Treasury	586	8.58	0.23	17.01	14.36	10.57	(0.18)	4.92	1.23	0.45
NYC - Treasury Agency Plus Five			0.74	17.08	14.63	10.40	(0.05)	4.66	1.21	0.72
Excess			(0.51)	(0.07)	(0.27)	0.17	(0.12)	0.27	0.01	(0.27)
SSGA IT Treasury 1-10Y	6	0.08	0.43	7.02	5.75					
FTSE USBIG Treasury/Agency 1-10 y			0.58	6.99	5.74					
Excess			(0.15)	0.03	0.01					
SSGA ST Treasury 1-3Y	237	3.48	0.13	4.00	2.87	3.56	1.51	0.45		
FTSE USBIG Treasury 1-3 Y Index			0.27	4.06	2.94	3.56	1.56	0.42		
Excess			(0.14)	(0.06)	(0.07)	0.00	(0.05)	0.03		
HIGH YIELD										
Mackay Shields High Yield	199	2.92	10.80	2.55	(1.52)	13.85				
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32				
Excess			0.66	2.56	2.32	(0.47)				
Nomura High Yield	193	2.82	10.18	(0.69)	(4.36)	13.74				
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32				
Excess			0.05	(0.69)	(0.53)	(0.58)				
BANK LOANS										
Barings Bank Loans	119	1.75	7.33	(3.08)	(5.83)	7.82	0.38	4.47	8.48	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	(1.39)	0.51
TIPS										
SSGA TIPS	287	4.20	4.26	8.36	6.10	8.44	(1.29)	3.04	4.78	
BBG BARC Gbl Inf-Lk: US TIPS (Dly)			4.24	8.28	6.01	8.43	(1.26)	3.01	4.68	
Excess			0.01	0.08	0.10	0.02	(0.03)	0.04	0.09	

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
ECONOMICALLY TARGETED INVESTMENTS										
RBC Access MBS	10	0.15	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
AFL-CIO Housing Investment Trust	18	0.27	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
CPC Construction Facility	2	0.03	0.71	6.19	0.30	8.12	4.14	6.05	(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	2.76	(1.19)	4.03	0.15	2.72	(6.99)	10.01
BOA PPAR FNMA	1	0.02	(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	3	0.04	(0.40)	15.33	5.73	19.71	2.63	5.26	3.71	6.69
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(1.07)	8.12	1.58	11.91	0.77	1.65	1.33	4.20
Citibank PPAR GNMA	0	0.00	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	0	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	1	0.02	(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

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
ECLF PPAR FNMA	0	0.00								
FNMA Plus 85bps										
Excess										
JPMC PPAR FNMA	4	0.06	0.16	10.58	6.31	14.68	1.68	9.96	7.94	6.18
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(0.51)	3.37	2.16	6.88	(0.18)	6.35	5.56	3.68
LIIF PPAR FNMA	2	0.03	(1.11)	11.85	5.04	16.35	2.27	9.55	5.03	6.29
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(1.78)	4.64	0.89	8.55	0.41	5.94	2.65	3.79
LIIF PPAR GNMA	0	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	0	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	0	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
Wells Fargo PPAR FNMA	0	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				

Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
CASH										
Short Term BERS	123	1.80	0.04	1.36	0.36	2.00	1.92	1.10	0.55	0.39
ICE BofA US 3-Month Treasury Bill			0.02	1.63	0.60	2.28	1.87	0.86	0.33	0.05
Excess			0.02	(0.27)	(0.23)	(0.28)	0.05	0.24	0.23	0.34
Cash Account	0	0.00								
Securities Lending	0	0.00								



**New York City
Board of Education Retirement System**

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		925,606,394	589,347,688	371,760,512	441,564,984	1.38	10.5%
TOTAL ACTIVE							
Mesirow Financial Private Equity Partnership Fund III, L.P.	2005	57,000,000	55,100,648	82,966,991	9,510,878	1.68	8.2%
Mesirow Financial Private Equity Partnership Fund IV, L.P.	2006	25,000,000	22,973,154	31,022,289	9,196,411	1.75	10.0%
New York Fairview Private Equity Fund, L.P.	2006	19,000,000	17,700,307	19,981,120	3,671,309	1.34	5.2%
Mesirow Financial Private Equity Partnership Fund V, L.P.	2009	45,000,000	39,622,655	43,432,954	32,932,520	1.93	15.2%
<i>NYCBERS - 2012 Emerging Manager Program</i>	<u>2012</u>	<u>14,650,000</u>	<u>14,501,842</u>	<u>3,845,619</u>	<u>15,234,903</u>	<u>1.32</u>	<u>9.4%</u>
Platinum Equity Capital Partners III, L.P.	2012	15,000,000	14,911,803	20,685,245	5,782,556	1.77	34.9%
Warburg Pincus Private Equity XI, L.P.	2012	25,000,000	25,676,063	26,181,185	13,169,523	1.53	11.4%
Apollo Investment Fund VIII, L.P.	2013	20,000,000	18,582,964	9,080,467	13,716,525	1.23	7.2%
Carlyle Partners VI, L.P.	2013	20,000,000	21,182,128	9,128,766	17,643,176	1.26	8.0%
Crestview Partners III (Co-Investment B), L.P.	2013	5,000,000	5,181,674	250,760	4,335,098	0.89	-4.5%
Crestview Partners III, L.P.	2013	15,000,000	10,560,347	6,396,772	6,741,276	1.24	9.1%
Landmark Equity Partners XV, L.P.	2013	19,000,000	14,377,476	10,899,976	7,865,896	1.31	12.5%
Landmark Equity Partners XV, L.P. - Side Car	2013	6,000,000	5,333,249	3,988,440	3,831,616	1.47	15.1%
ASF VI NYC Co-Invest, L.P.	2014	5,000,000	4,012,664	3,966,067	1,651,126	1.40	11.8%
ASF VI, L.P.	2014	15,000,000	12,114,181	12,968,815	3,755,548	1.38	11.5%
Carlyle Partners VI, L.P. - Side Car	2014	2,200,000	1,600,688	92,959	1,345,021	0.90	-2.7%
CVC Capital Partners VI, L.P.	2014	20,477,221	17,736,127	8,608,838	17,954,987	1.50	15.3%
Lexington Capital Partners VIII, L.P.	2014	20,000,000	17,938,407	9,609,719	13,679,267	1.30	15.1%
Vista Equity Partners Fund V, L.P.	2014	25,000,000	30,544,647	30,048,486	24,758,520	1.79	20.3%
American Securities Partners VII, L.P.	2015	8,000,000	6,938,232	1,107,756	4,327,061	0.78	-12.0%
ASF VII B NYC Co-Invest, L.P.	2015	6,000,000	3,477,479	937,376	4,687,219	1.62	26.9%
ASF VII, L.P.	2015	10,000,000	5,819,185	1,258,699	5,777,283	1.21	13.0%
Bridgepoint Europe V Co-Invest	2015	2,905,075	2,701,297	1,186,252	3,438,588	1.71	24.7%
Bridgepoint Europe V, L.P.	2015	8,563,826	8,344,591	2,959,961	7,462,978	1.25	10.2%
Centerbridge Capital Partners III, L.P.	2015	2,500,000	2,051,580	881,717	1,864,904	1.34	14.1%
EQT VII, L.P.	2015	16,681,633	16,802,072	7,854,551	14,404,022	1.32	13.6%
<i>NYCBERS - 2015 Emerging Manager Program</i>	<u>2015</u>	<u>37,250,000</u>	<u>18,423,790</u>	<u>2,707,145</u>	<u>18,490,410</u>	<u>1.15</u>	<u>30.9%</u>
Siris Partners III, L.P.	2015	3,500,000	3,576,900	1,639,497	2,883,798	1.26	12.2%
Warburg Pincus Private Equity XII, L.P.	2015	21,500,000	20,662,598	2,107,945	23,082,196	1.22	10.1%
Welsh, Carson, Anderson & Stowe XII, L.P.	2015	10,000,000	8,961,878	5,198,306	8,607,208	1.54	21.4%

Information provided by the New York City Board of Education 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%
Apax IX USD, L.P.	2016	13,000,000	12,005,757	341,848	14,501,096	1.24	15.2%
Platinum Equity Capital Partners IV, L.P.	2016	11,500,000	10,292,110	3,176,847	7,907,141	1.08	5.4%
Vista Equity Partners Fund VI, L.P.	2016	16,000,000	17,774,277	4,164,227	19,393,665	1.33	13.2%
Ares Corporate Opportunities Fund V, L.P.	2017	10,000,000	8,614,370	1,072,064	7,578,371	1.00	0.3%
BC European Capital X Metro Co-Investment L.P.	2017	4,583,650	4,235,129	28,855	4,674,472	1.11	7.0%
BC European Capital X, L.P.	2017	11,305,666	9,675,282	189,057	9,545,361	1.01	0.5%
Green Equity Investors VII, L.P.	2017	10,000,000	7,760,545	89,576	8,765,649	1.14	8.3%
KKR Americas Fund XII, L.P.	2017	16,000,000	7,664,350	105,486	8,002,009	1.06	4.0%
Palladium Equity Partners V, L.P.	2017	10,000,000	3,340,381	33,399	2,678,017	0.81	-27.9%
Warburg Pincus Financial Sector, L.P.	2017	13,000,000	7,198,750	689,605	6,821,172	1.04	4.0%
Apollo Investment Fund IX, L.P.	2018	32,000,000	5,814,704	59,683	5,239,220	0.91	N/M
Bridgepoint Europe VI Co-Invest	2018	3,454,153	812,745	-	683,646	0.84	N/M
Bridgepoint Europe VI, L.P.	2018	13,781,226	2,710,152	-	2,395,938	0.88	N/M
CVC Capital Partners VII, L.P.	2018	18,840,153	9,482,923	133,047	9,266,548	0.99	N/M
EQT VIII SCSP	2018	12,720,031	5,701,920	158,561	6,021,830	1.08	N/M
EQT VIII SCSP (Co-Invest)	2018	4,637,094	2,564,675	-	2,732,158	1.07	N/M
Platinum Equity Capital Partners IV, L.P. (Co-Invest)	2018	1,500,000	1,052,043	209,317	742,721	0.90	N/M
Platinum Equity Small Cap Fund, L.P.	2018	10,000,000	2,271,824	25,020	794,355	0.36	N/M
Siris Partners IV, L.P.	2018	10,000,000	4,599,281	-	3,776,549	0.82	N/M
Vista Equity Partners Fund VII, L.P.	2018	20,500,000	5,179,264	20,721	4,811,599	0.93	N/M
Apax X, L.P.	2019	12,500,000	-	-	(214,844)	N/A	N/A
ASF VIII B NYC Co-Invest, L.P.	2019	10,500,000	513,119	-	835,916	1.63	N/M
ASF VIII, L.P.	2019	21,000,000	4,983,706	62	5,373,372	1.08	N/M
Crestview Partners IV (FF), L.P.	2019	2,666,667	-	-	4,321	N/A	N/A
Crestview Partners IV, L.P.	2019	8,000,000	-	-	2,041	N/A	N/A
ICG Strategic Equity Fund III LP	2019	13,340,000	119,331	-	338,076	2.83	N/M
KKR European Fund V, L.P. - USD	2019	9,950,000	1,132,720	-	782,169	0.69	N/M
LCP IX Co-Invest Partners B, L.P.	2019	4,125,000	-	-	(3,828)	N/A	N/A
Lexington Capital Partners IX, L.P.	2019	12,375,000	876,402	156,146	1,280,763	1.64	N/M
Lindsay Goldberg V, L.P.	2019	10,500,000	-	-	-	N/A	N/A
<u>NYCBERS - 2019 Emerging Manager Program</u>	<u>2019</u>	<u>39,100,000</u>	<u>1,827,077</u>	<u>101,069</u>	<u>1,850,564</u>	<u>1.07</u>	<u>N/M</u>
Warburg Pincus Global Growth, L.P.	2019	15,000,000	2,828,825	11,250	2,603,704	0.92	N/M
WCAS XIII, L.P.	2019	10,000,000	625,403	-	313,211	0.50	N/M

Information provided by the New York City Board of Education 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%
Clearlake Capital Partners VI, L.P.	2020	10,000,000	-	-	-	N/A	N/A
FTV VI, L.P.	2020	3,500,000	280,000	-	266,181	0.95	N/M

Information provided by the New York City Board of Education 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			607,482,594	488,213,213	275,359,250	373,191,010	1.33	9.7%
TOTAL PRIVATE REAL ESTATE								
LaSalle Property Fund	2010	Core Portfolio	38,600,000	38,600,000	11,311,242	50,158,282	1.59	9.5%
UBS Trumbull Property Fund	2011	Core Portfolio	41,400,000	63,748,629	68,333,799	33,178,884	1.59	7.9%
NYC Asset Investor #2	2013	Core Portfolio	11,000,000	11,187,179	4,748,101	8,141,310	1.15	3.6%
MetLife Core Property Fund	2014	Core Portfolio	15,000,000	15,000,000	3,655,836	19,261,626	1.53	9.1%
USAA Eagle Real Estate Fund	2015	Core Portfolio	18,000,000	19,336,674	1,340,526	21,363,677	1.17	7.0%
Artemis Co-Investment	2016	Core Portfolio	11,000,000	12,622,943	4,967,662	10,468,484	1.22	13.9%
Brookfield Premier Real Estate Partners	2016	Core Portfolio	10,000,000	11,348,224	1,348,224	13,801,193	1.33	10.7%
Exeter Core Industrial Club Fund II	2016	Core Portfolio	10,000,000	9,610,000	1,520,644	10,002,073	1.20	9.8%
Jamestown Premier Property Fund	2016	Core Portfolio	6,246,307	6,622,958	2,650,385	5,239,016	1.19	7.3%
Lion Industrial Trust	2017	Core Portfolio	18,000,000	19,925,080	1,925,079	25,268,458	1.36	15.1%
Almanac Realty Securities VIII	2018	Core Portfolio	10,500,000	1,291,557	75,964	938,775	0.79	-39.9%
Almanac Realty Securities VIII (Sidecar II)	2018	Core Portfolio	7,000,000	822,564	30,489	739,636	0.94	-11.7%
Artemis Income and Growth Fund	2018	Core Portfolio	10,000,000	1,970,897	2,601	1,802,630	0.92	NM
Heitman Core Real Estate Debt Income Trust	2018	Core Portfolio	25,000,000	10,812,395	812,395	10,840,431	1.08	6.6%
Exeter Core Industrial Fund III	2019	Core Portfolio	12,700,000	1,460,500	-	1,242,346	0.85	NM
Harrison Street Core Property Fund	2019	Core Portfolio	10,000,000	10,158,703	158,703	10,324,412	1.03	NM
Harrison Street Core Property Fund Co-Investment	2019	Core Portfolio	5,000,000	3,199,381	44,392	3,283,234	1.04	NM
Franklin Templeton Private Real Estate Fund	2011	Non-Core Portfolio	30,000,000	35,940,362	48,108,189	1,266,561	1.37	19.5%
Brookfield Strategic Real Estate Partners	2012	Non-Core Portfolio	10,000,000	11,837,526	17,540,521	5,411,544	1.94	20.0%
Blackstone Real Estate Partners Europe IV L.P. - USD	2013	Non-Core Portfolio	32,500,000	32,316,647	36,940,393	11,224,425	1.49	14.0%
NYC Asset Investor #1	2013	Non-Core Portfolio	10,000,000	11,415,986	5,499,575	7,992,021	1.18	4.2%
NYC Asset Investor #3	2013	Non-Core Portfolio	8,000,000	5,271,908	926,225	6,351,695	1.38	9.3%
Carlyle Realty Partners VII, L.P.	2014	Non-Core Portfolio	25,000,000	22,747,452	20,837,890	10,474,060	1.38	13.5%
H2 Special Opportunities III	2014	Non-Core Portfolio	15,000,000	15,000,000	13,249,676	4,006,982	1.15	5.7%
Blackstone Real Estate Partners VIII L.P.	2015	Non-Core Portfolio	16,500,000	17,378,577	6,806,225	15,394,860	1.28	12.6%
Tristan European Property Investors Special Opp IV	2015	Non-Core Portfolio	11,250,309	9,421,338	1,213,501	9,597,176	1.15	6.7%
DivcoWest Fund V	2016	Non-Core Portfolio	10,000,000	6,659,226	193,359	7,193,097	1.11	5.8%
Exeter Industrial Value Fund IV, L.P.	2016	Non-Core Portfolio	10,000,000	8,500,000	-	9,056,709	1.07	4.6%
H2 Special Opportunities IV	2016	Non-Core Portfolio	10,000,000	6,500,857	81,350	3,790,365	0.60	-63.0%
Pramerica Real Estate Capital VI	2016	Non-Core Portfolio	10,438,416	8,913,313	4,479,825	5,592,388	1.13	12.2%
PW Real Estate Fund III	2016	Non-Core Portfolio	11,244,652	7,579,150	3,132,129	9,627,182	1.68	27.5%
Westbrook Real Estate Fund X	2016	Non-Core Portfolio	10,000,000	8,622,352	4,364,315	5,551,974	1.15	11.0%
DRA Growth and Income Fund IX	2017	Non-Core Portfolio	10,000,000	10,089,107	2,835,557	9,015,105	1.17	13.1%
Lone Star Real Estate Fund V, L.P.	2017	Non-Core Portfolio	13,203,999	6,245,131	2,439,697	2,786,042	0.84	-17.8%
NYCRS-KKR CMBS Retention Partners	2017	Non-Core Portfolio	13,000,000	11,621,255	1,862,254	10,545,039	1.07	3.9%
Aermont Capital Real Estate Fund IV	2018	Non-Core Portfolio	9,948,911	1,708,982	-	590,412	0.35	NM
Brookfield Strategic Real Estate Partners III, L.P.	2018	Non-Core Portfolio	12,000,000	3,940,278	48,299	3,840,544	0.99	NM
KKR Real Estate Partners Americas II	2018	Non-Core Portfolio	10,000,000	6,082,255	1,779,608	5,445,219	1.19	18.8%
Blackstone Real Estate Partners IX L.P.	2019	Non-Core Portfolio	15,000,000	2,703,826	94,619	2,512,968	0.96	NM
GreenOak Asia III	2019	Non-Core Portfolio	10,000,000	-	-	(66,851)	-	NM
Westbrook Real Estate Fund XI	2019	Non-Core Portfolio	10,000,000	-	-	(8,768)	-	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	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
DivcoWest Fund VI	2020	Non-Core Portfolio	10,000,000	-	-	(54,206)	-	NM
Exeter Industrial Value Fund V, L.P.	2020	Non-Core Portfolio	5,000,000	-	-	-	-	NM
KKR Real Estate Partners Europe II	2020	Non-Core Portfolio	9,950,000	-	-	-	-	NM

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

Alternative Assets Manager Performance Detail



Through March 31, 2020

	Vintage Year	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
TOTAL INFRASTRUCTURE		250,356,348	150,313,221	36,182,040	146,269,349	1.21	10.7%
TOTAL INFRASTRUCTURE							
Brookfield Infrastructure Fund II, L.P.	2013	10,000,000	8,362,052	3,438,614	9,621,460	1.56	11.5%
Global Energy & Power Infrastructure Fund II	2014	15,000,000	15,154,459	11,551,059	9,427,204	1.38	25.9%
IFM Global Infrastructure Fund	2014	15,000,000	20,027,335	7,421,302	21,734,779	1.46	10.6%
KKR Global Infrastructure Investors II L.P.	2014	19,000,000	19,677,847	5,236,595	23,192,610	1.44	15.2%
Actis Energy 4	2016	10,600,000	7,025,442	1,006,504	7,570,000	1.22	13.2%
Brookfield Infrastructure Fund III, L.P.	2016	10,000,000	6,041,599	1,284,311	5,713,451	1.16	8.3%
Global Infrastructure Partners III-A/B, L.P.	2016	12,000,000	9,903,038	1,331,238	8,581,163	1.00	0.0%
ASF VII Infrastructure L.P.	2017	12,000,000	5,228,984	527,406	5,465,270	1.15	15.3%
Axiom Infrastructure North America	2017	12,221,338	12,428,570	1,431,225	11,879,486	1.07	5.3%
EQT Infrastructure III (No.2) SCSp	2017	9,259,111	9,442,439	1,438,206	9,610,117	1.17	11.3%
NYCRS EIG Energy Partners, L.P.	2017	11,760,000	3,300,801	423,676	3,104,517	1.07	6.0%
Cardinal NR Sidecar Holdings L.P.	2018	1,880,000	1,891,578	202,508	2,037,093	NM	NM
Global Energy & Power Infrastructure Fund III, L.P.	2018	15,600,000	3,478,216	198,158	2,812,010	NM	NM
KKR Global Infrastructure Investors III L.P.	2018	15,600,000	5,750,680	115,245	4,871,447	0.87	-21.8%
NYCRS EIG Energy Partners Co-Investment, L.P.	2018	2,940,000	-	-	-		0.0%
Ardian Infrastructure Fund V B	2019	14,295,899	2,814,186	70,172	2,614,718	NM	NM
Brookfield Infrastructure Fund IV (BIF IV): Co-invest	2019	2,000,000	2,000,000	-	2,061,455	NM	NM
Brookfield Infrastructure Fund IV, L.P.	2019	19,000,000	7,265,569	79,896	6,733,067	NM	NM
EQT Infrastructure IV (No.2) USD SCSp	2019	18,000,000	8,516,834	425,925	7,641,367	NM	NM
EQT Infrastructure IV Co-Investment (Saber)	2019	1,600,000	1,612,308	-	1,600,000	NM	NM
Global Infrastructure Partners IV-A/B, L.P.	2019	22,600,000	391,284	-	(1,865)	NM	NM

Information provided by the New York City Board of Education Retirement System Consultants



**New York City
Board of Education Retirement System**

Appendix D

Footnotes



Through June 30, 2020

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

Page 13 - 18 - Portfolio Asset Allocation

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

Pages 19 - 21 - 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 * 33.35%

International Developed (EAFE) Markets: MSCI World ex USA IMI Net * 12.13%

International Active – Global Equity: MSCI ACWI * 1.65%

Emerging Markets: MSCI Emerging Markets * 6.76%

International Emerging Managers FOF: MSCI ACWI Ex US IMI Net * 0.85%

Private Equity: Russell 3000 + 300 b.p. per annum * 6.84%

Private Real Estate – Core: NFI - ODCE Net * 3.41%

Private Real Estate – Non Core: NFI - ODCE Net + 200bps * 2.31%

Infrastructure: CPI + 4% * 2.16%

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

Total Active Government: NYC Treasury Agency + 5 * 9.42%

Core Fixed Income: BBG Barc Agg * 0.00%

Progress Fixed: BBG Barc Agg * 0.00%

Mortgage: FTSE Mortgage Index * 3.69%

ETI: ETI Custom Benchmark * 0.65%

Investment Grade Credit: NYC – Investment Grade Credit * 4.34%

High Yield: Bloomberg Barclays US High Yield 2% Issuer Capped * 6.00%



Through June 30, 2020

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

*TIPS: BBG BARC Gbl Inf-Lk: US TIPS (Dly) * 4.46%*

Page 22 – 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):

BERS - Economically Targeted Investments Quarterly Report

Public/Private Apartment Rehabilitation Program (PPAR)

Lenders*	BOA		CCD		CFSB		CPC		JPM		LIIF		NCBCI		NHS		WF		LISC		BE		HDC	
Contractual Commitment ¹	\$4.00		\$4.00		\$1.00		\$4.00		\$5.00		\$4.00		\$1.00		\$1.00		\$2.00		\$1.00		\$1.00		\$2.00	
Current Market Value ¹	\$1.35		\$3.00		\$0.13		\$1.14		\$4.04		\$2.31		\$0.10		\$0.00		\$0.28		\$0.13		\$0.26		\$0.00	
	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units
Commitments Q2 (included in total)																								
Bronx	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.11	30	\$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	0.04	28	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Queens	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Staten Island	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Outside of NYC	0.00	0	0.00	0	0.00	0	0.03	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	\$0.03	70	\$0.15	58	\$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	\$0.20	63	\$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	0.11	68	0.00	0	0.00	0	0.11	89	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.22	360	0.00	0
Manhattan	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Queens	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Staten Island	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Outside of NYC	0.00	0	0.00	0	0.00	0	0.02	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	\$0.11	68	\$0.00	0	\$0.02	66	\$0.31	152	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.22	360	\$0.00	0
Total Commitments																								
Bronx	\$0.00	0	\$0.00	0	\$0.00	0	\$0.56	1,385	\$0.67	281	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.11	101	\$0.00	0
Brooklyn	0.00	0	0.14	0	0.00	0	0.21	1,093	0.06	67	0.18	95	0.00	0	0.00	0	0.25	130	0.25	156	0.00	0	0.00	0
Manhattan	0.00	0	0.00	0	0.05	39	0.19	423	0.04	28	0.45	174	0.00	0	0.00	0	0.39	103	0.25	65	0.21	83	0.00	0
Queens	0.00	0	0.00	0	0.00	0	0.06	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	0.10	333	0.15	74	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	\$0.14	0	\$0.05	39	\$1.12	3,386	\$0.92	450	\$0.64	269	\$0.00	0	\$0.00	0	\$0.64	233	\$0.50	221	\$0.32	184	\$0.00	0
Historical Investments																								
Bronx	\$0.26	60	\$1.37	802	\$0.00	0	\$0.39	1,715	\$2.61	1,520	\$0.51	178	\$0.00	0	\$0.00	0	\$0.11	90	\$0.11	48	\$0.00	0	\$0.00	0
Brooklyn	0.28	54	0.87	481	0.00	0	0.46	1,300	0.33	226	0.71	401	0.00	0	0.00	0	0.00	0	0.00	0	0.22	360	0.00	0
Manhattan	0.34	100	0.24	283	0.16	197	0.25	1,204	0.33	333	1.01	407	0.10	123	0.00	0	0.09	100	0.00	0	0.00	0	0.00	0
Queens	0.84	293	0.04	54	0.00	0	0.01	38	0.27	164	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	0.04	67	0.00	0	0.00	0	0.00	0
Outside of NYC	0.09	39	0.21	41	0.00	0	0.23	527	0.23	123	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Total	\$1.81	546	\$2.73	1,661	\$0.16	197	\$1.33	4,784	\$3.77	2,366	\$2.23	986	\$0.10	123	\$0.00	0	\$0.24	257	\$0.11	48	\$0.22	360	\$0.00	0

*Lenders :

Bank of America	Citi Community Development	Carver Federal Savings Bank	The Community Preservation Corp	JP Morgan Chase	Low Income Investment Fund	NCB Capital Impact	Neighborhood Housing Service	Wells Fargo	Local Initiatives Support Corp	Bellwether Enterprise	NYC HDC
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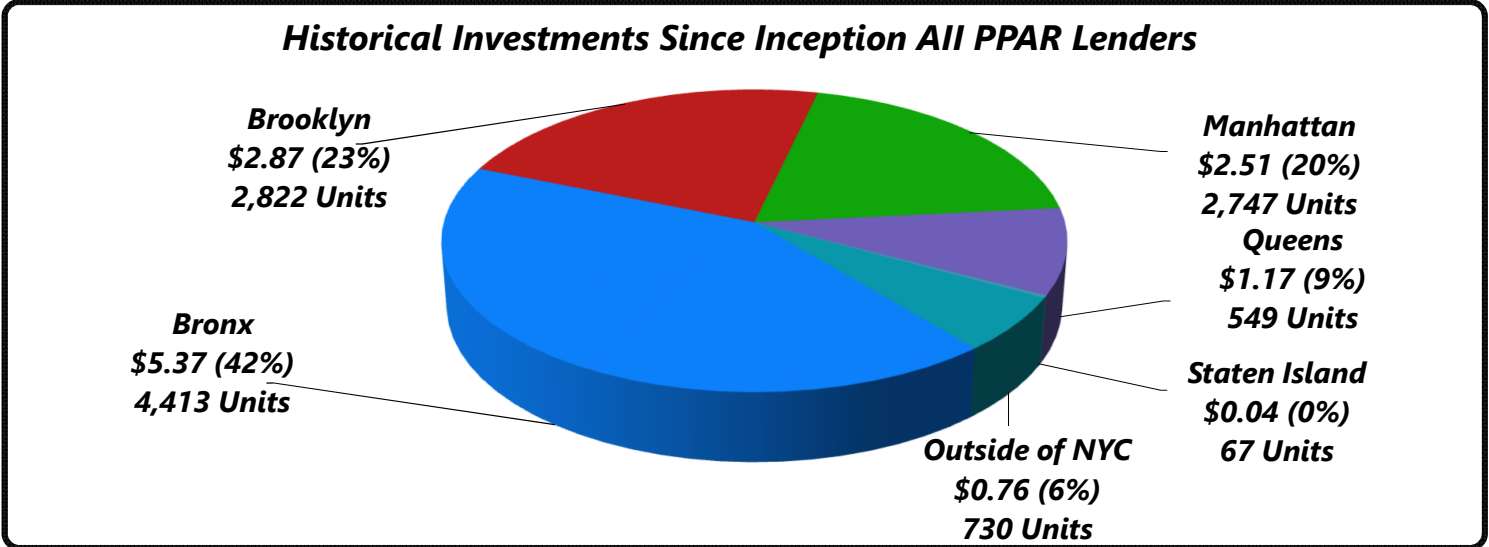
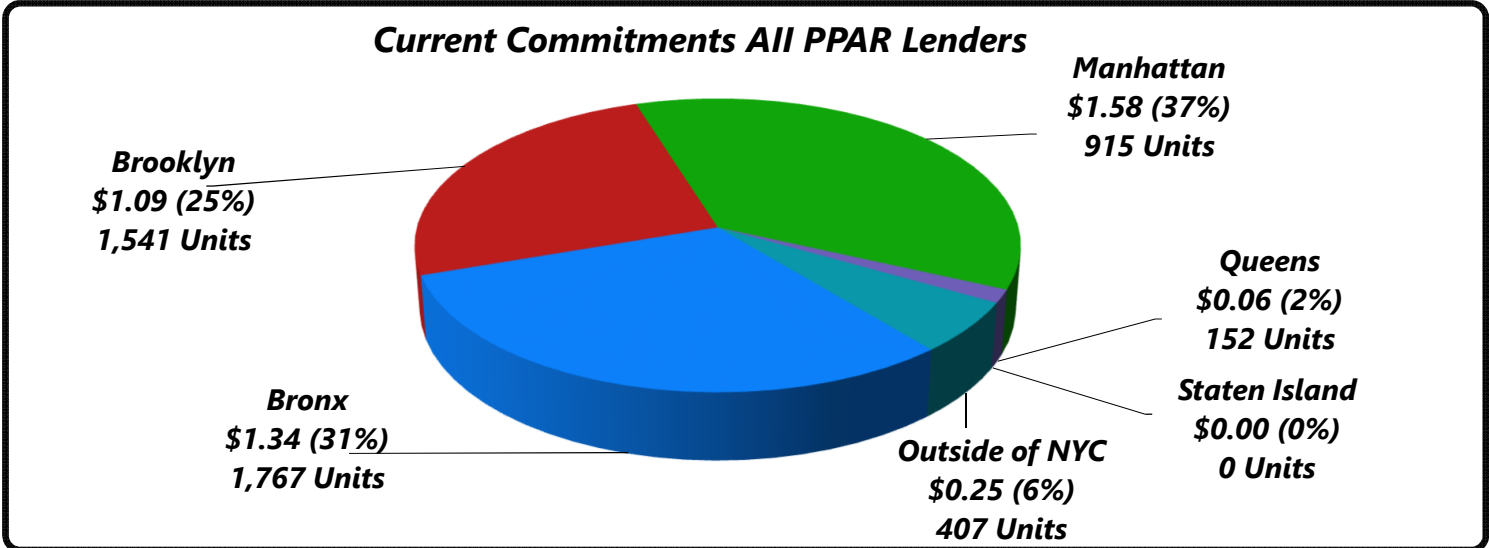
¹ Dollar amount listed in millions

BERS - Economically Targeted Investments Quarterly Report

Public/Private Apartment Rehabilitation Program (PPAR)

Lenders*	All Lender Totals	
Contractual Commitment ¹	\$30.00	
Current Market Value ¹	\$12.75	
	Dollars	Units
Commitments Q2 (included in total)		
Bronx	\$0.11	30
Brooklyn	0.00	0
Manhattan	0.04	28
Queens	0.00	0
Staten Island	0.00	0
Outside of NYC	0.03	70
Total	\$0.18	128
Delivered Q2 (included in total)		
Bronx	\$0.20	63
Brooklyn	0.44	517
Manhattan	0.00	0
Queens	0.00	0
Staten Island	0.00	0
Outside of NYC	0.02	66
Total	\$0.66	646
Total Commitments		
Bronx	\$1.34	1,767
Brooklyn	1.09	1,541
Manhattan	1.58	915
Queens	0.06	152
Staten Island	0.00	0
Outside of NYC	0.25	407
Total	\$4.32	4,782
Historical Investments		
Bronx	\$5.37	4,413
Brooklyn	2.87	2,822
Manhattan	2.51	2,747
Queens	1.17	549
Staten Island	0.04	67
Outside of NYC	0.76	730
Total	\$12.71	11,328

¹ Dollar amount listed in millions

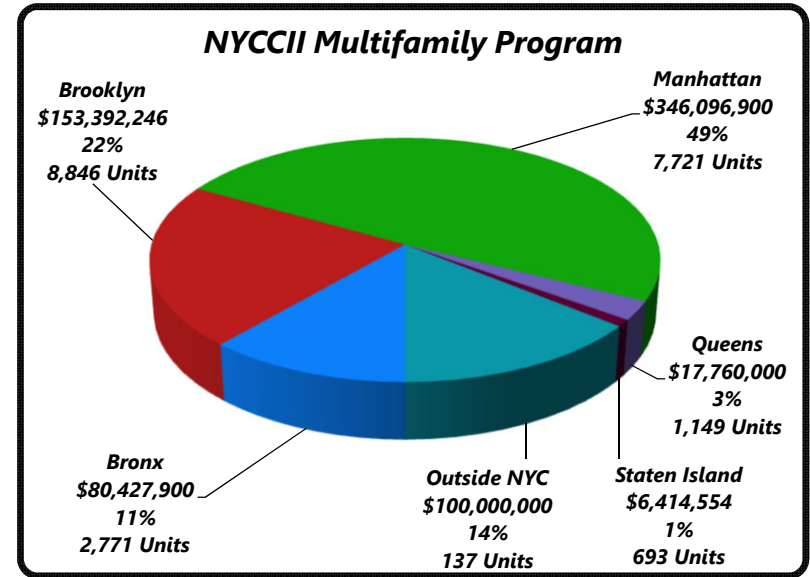


BERS - Economically Targeted Investments Quarterly Report

AFL-CIO Housing Investment Trust (HIT)
Market Value \$18.31 million¹

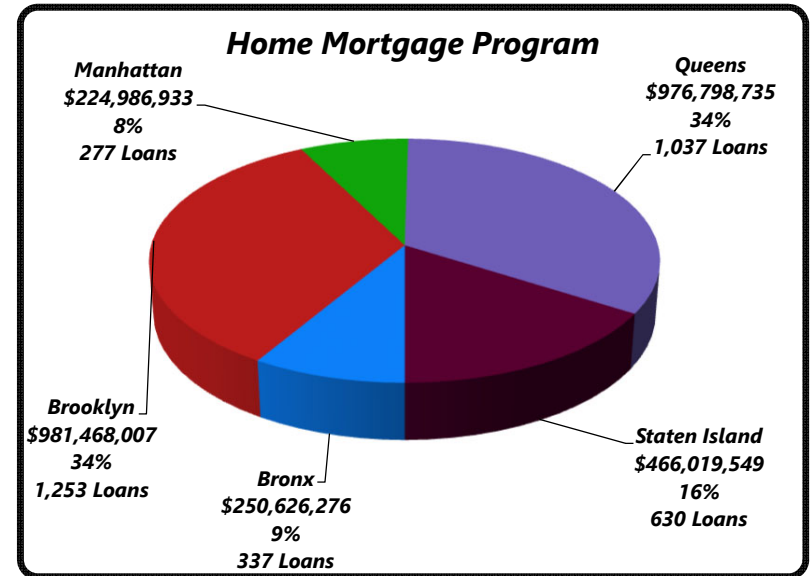
NYC Community Investment Initiative (NYCCII)

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

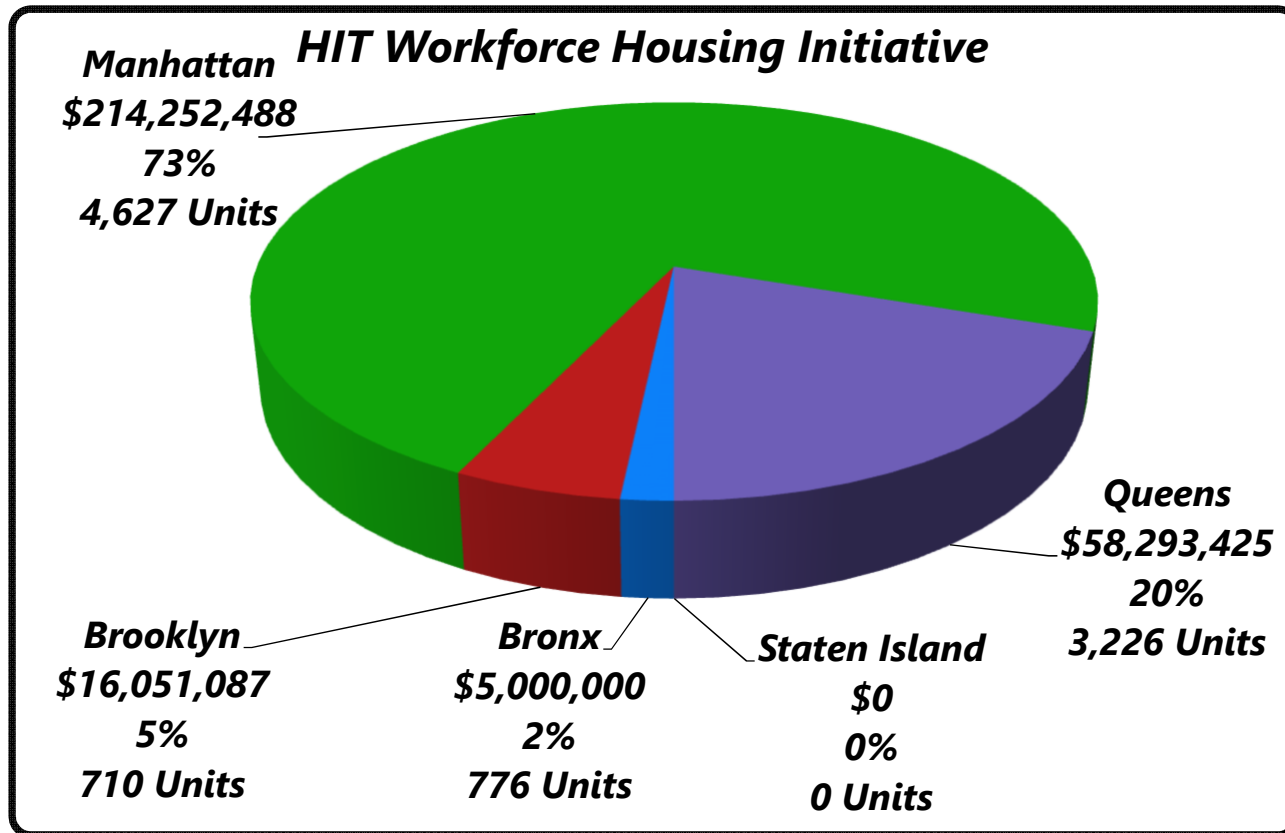


BERS Loans	Phase I:	0	Phase II:	13	Total:	13
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¹Interest is reinvested
²Low/Moderate Income Units

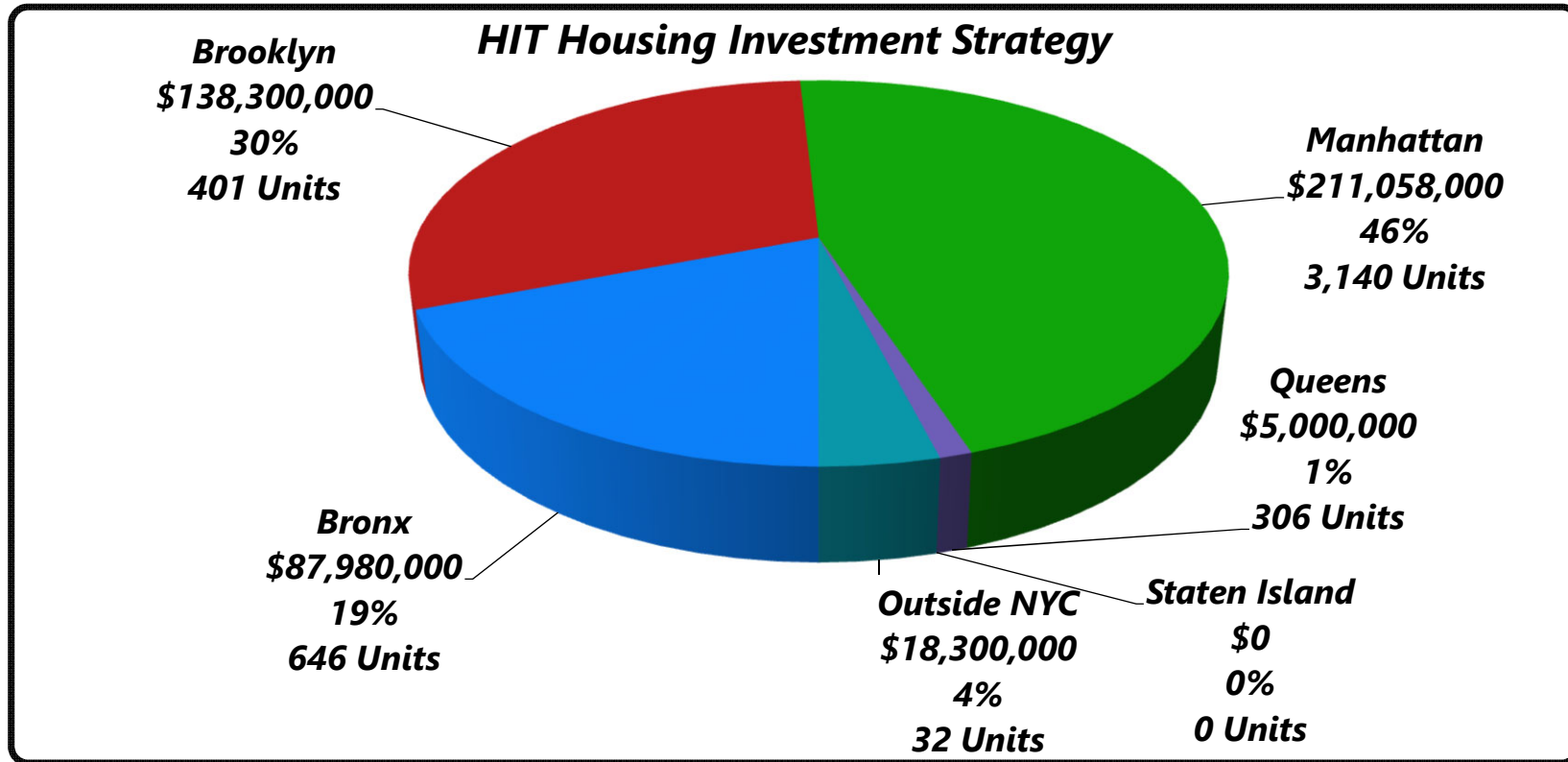
BERS - Economically Targeted Investments Quarterly Report

AFL-CIO Housing Investment Trust (HIT) NYC Workforce Housing Initiative: 2009 - 2015		
<u>Borough</u>	<u>Investments</u> <u>Since Inception</u>	<u>Low/Mod Units</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



BERS - Economically Targeted Investments Quarterly Report

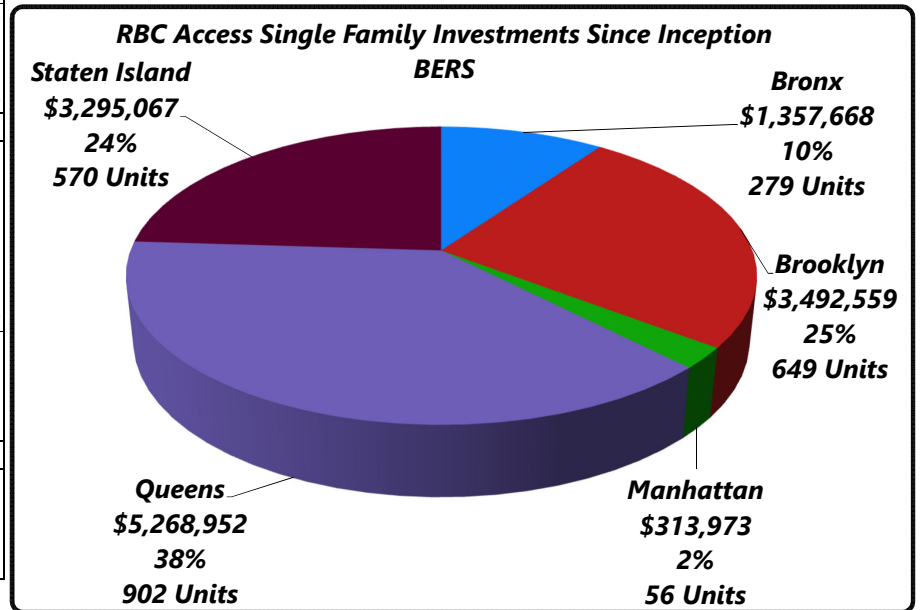
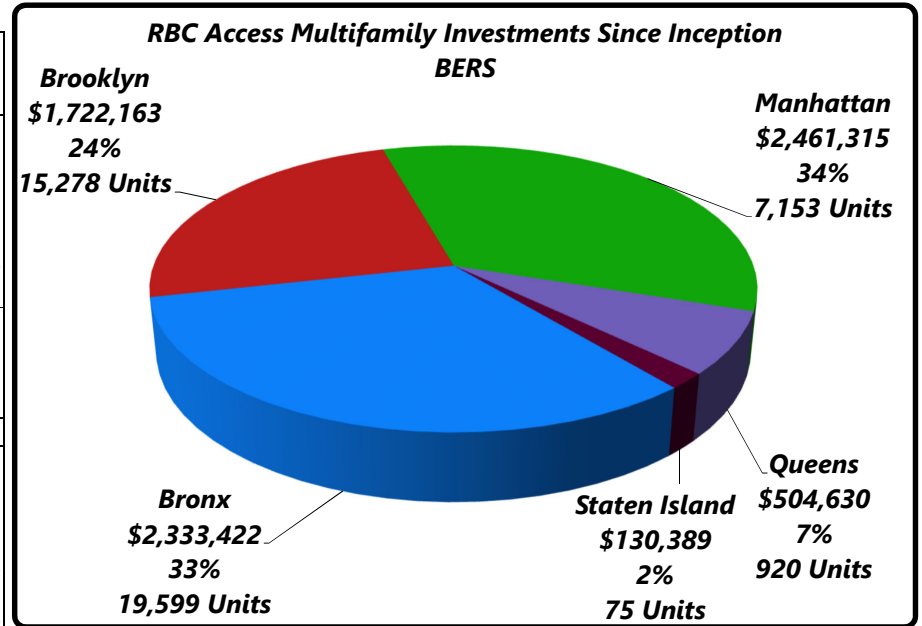
AFL-CIO Housing Investment Trust (HIT)					
HIT Housing Investment Strategy: 2015 - Q2 2020					
Borough	Q2 Investments	Investments		LMI Units	
		Since Inception	Q2 LMI Units	Since Inception	
Bronx	\$0	\$87,980,000	0	646	
Brooklyn	0	138,300,000	0	401	
Manhattan	0	211,058,000	0	3,140	
Queens	0	5,000,000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



BERS - Economically Targeted Investments Quarterly Report

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

\$10.5 million Allocated (2.34% of total account)				
Market Value \$10.22 million				
Multifamily Investments Detail				
	<u>\$ Invested</u> ¹		<u>Units</u> ²	
	<u>Q2</u>	<u>Total</u>	<u>Q2</u>	<u>Total</u>
Bronx	\$0	\$2,333,422	0	19,599
Brooklyn	0	1,722,163	0	15,278
Manhattan	0	2,461,315	0	7,153
Queens	0	504,630	0	920
Staten Island	0	130,389	0	75
Total BERS Multifamily Investments	\$0	\$7,151,919	0	43,025
Multifamily Total All Systems	\$0	\$305,637,572	0	43,025
Single Family Investments Detail				
	<u>\$ Invested</u>		<u>Units</u>	
	<u>Q2</u>	<u>Total</u>	<u>Q2</u>	<u>Total</u>
Bronx	\$26,537	\$1,357,668	3	279
Brooklyn	78,713	3,492,559	8	649
Manhattan	0	313,973	0	56
Queens	27,156	5,268,952	3	902
Staten Island	65,948	3,295,067	8	570
Total BERS Single Family Investments	\$198,354	\$13,728,220	22	2,456
Single Family Total All Systems	\$8,476,655	\$586,676,054	22	2,456
Other Investments Detail				
	<u>\$ Invested</u>		<u>Loans</u>	
	<u>Q2</u>	<u>Total</u>	<u>Q2</u>	<u>Total</u>
Bronx	\$0	\$15,795	0	1
Brooklyn	0	126,135	0	8
Manhattan	0	56,930	0	5
Queens	0	12,716	0	3
Staten Island	0	0	0	0
Total BERS Other Investments	\$0	\$211,577	0	17
Other Investments Total All Systems	\$0	\$9,041,740	0	17
Grand Total BERS	\$198,354	\$21,091,716		
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.

BERS - Economically Targeted Investments Quarterly Report

Equity Investments

Total Market Value \$22.58 million

Hudson Market Value \$6.44 million

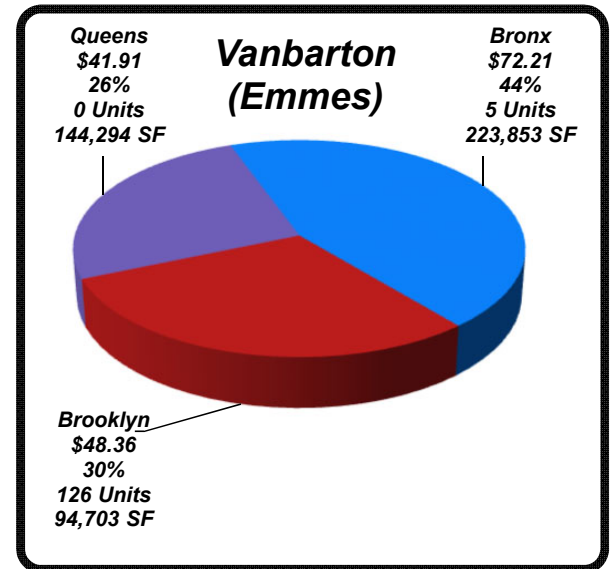
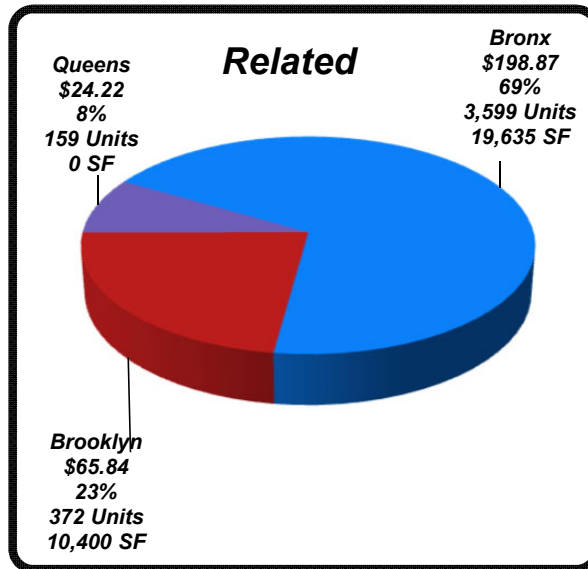
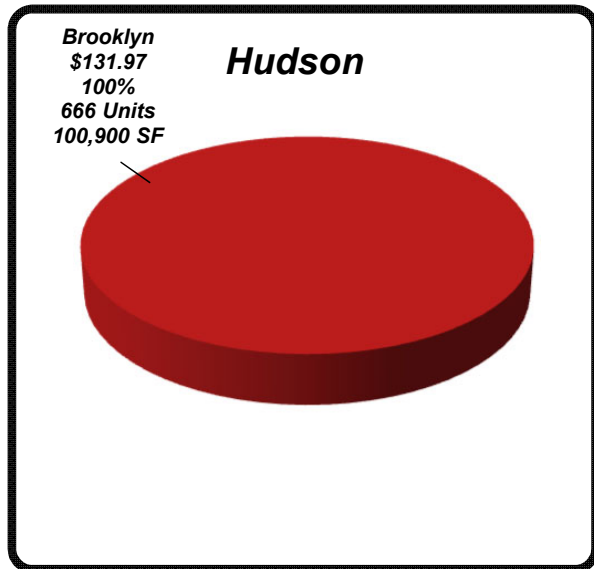
Borough	Gross			
	Capital Invested	Total Units	Workforce Units	Comm. SF
Bronx	\$0.00	0	0	0
Brooklyn	131.97	666	666	100,900
Manhattan	0.00	0	0	0
Queens	0.00	0	0	0
Staten Island	0.00	0	0	0
Outside NYC	0.00	0	0	0
Totals	\$131.97	666	666	100,900

Related Market Value \$8.14 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 \$7.99 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®

NYC Board of Education Retirement System – Public Material

First Quarter 2020 Report

NYC Board of Education Retirement System
First Quarter 2020 Report

Content

Section 1 – Portfolio Update

Section 2 – Portfolio Assessment

Section 3 – Funds-of-Funds Review

Appendix A – Glossary of Terms

Appendix B – Disclosure Statements

NYC Board of Education Retirement System

First Quarter 2020 Report



Section 1:

Portfolio Update



Portfolio Snapshot

Hamilton Lane was engaged by the NYC Board of Education Retirement System (“BERS”) in November 2012 to provide alternative investment fund administration services in accordance with the investment objectives of the BERS Private Equity portfolio (the “Portfolio”). This report represents the review by Hamilton Lane of the BERS’s Portfolio and is based on 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.

Private Equity Allocation: BERS has a target allocation of 9.0% +/- 4.0% to Private Equity. As of March 31, 2020, Private Equity constituted 7.2% of BERS total plan. (Plan value is \$6.141 billion as of March 31, 2020.)

Performance: As of March 31, 2020, the Portfolio consisted of 80 active partnerships from 40 underlying fund managers. The Portfolio has generated a since inception internal rate of return (“IRR”) of 10.51% and a total value multiple of 1.38x.

Portfolio Snapshot			
\$ millions	12/31/2019	3/31/2020	Change
Active Partnerships	78	80	2
Active GP Relationships	39	40	1
Capital Committed ⁽¹⁾⁽²⁾	\$881.3	\$894.0	\$12.7
Unfunded Commitment	\$349.1	\$342.4	(\$6.7)
Capital Contributed	\$569.7	\$589.3	\$19.6
Capital Distributed	\$359.9	\$371.8	\$11.9
Market Value	\$478.9	\$441.6	(\$37.3)
Total Value Multiple	1.47x	1.38x	(0.09x)
Since Inception IRR	12.22%	10.51%	(171 bps)
Avg. Age of Active Commitments	4.8 years	4.9 years	0.1 years

⁽¹⁾The “change” in capital committed from the prior quarter reflects currency adjustments from existing foreign denominated funds, as well as two new commitments made during the quarter.

⁽²⁾Includes only committed capital in the 2012, 2015 and 2019 Emerging Manager Programs

Portfolio Exposures: The Corporate Finance/Buyout strategy represents 55% of the Portfolio’s total exposure, Special Situations/Turnaround represents 13%, Growth Equity represents 12%, Secondary represents 12%, Co-Investment accounts for 7% and Venture Capital represents 1%. Strategic exposure takes into account the strategies for each of the underlying partnerships in the funds-of-funds within the BERS Portfolio.



Portfolio Overview

Commitments

The table below highlights all 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	\$3.5
3/13/2020	Clearlake Capital Partners VI, L.P.	Corporate Finance/Buyout - Large	\$10.0
Total			\$13.5

During the first quarter, the Portfolio closed on two new investments, totaling \$13.5 million, which are detailed below:

FTV VI, L.P. (\$3.5 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 pursues opportunities 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. (\$10.0 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 to the end of the first quarter 2020, and through the end of Q2 2020, the Portfolio made five commitments totaling \$104.8 million.

Subsequent Commitments After March 31, 2020			
Closing Date	Partnership	Strategy	Commitment Amount (\$ in Millions)
5/20/2020	One Rock Capital Partners III, L.P.	Co-Investment	\$25.0
5/29/2020	CVC Capital Partners VIII, L.P.	Secondaries	\$25.4
6/4/2020	Stellex Capital Partners II, L.P.	Secondaries	\$25.0
6/17/2020	ICG Strategic Equity Co-Investment Fund III LP	Secondaries	\$4.4
6/30/2020	NYC-Northbound Emerging Managers Program, L.P.	Secondaries	\$25.0
Total			\$104.8

One Rock Capital Partners III, L.P. (\$25.0 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. (\$25.4 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. (\$25.0 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.

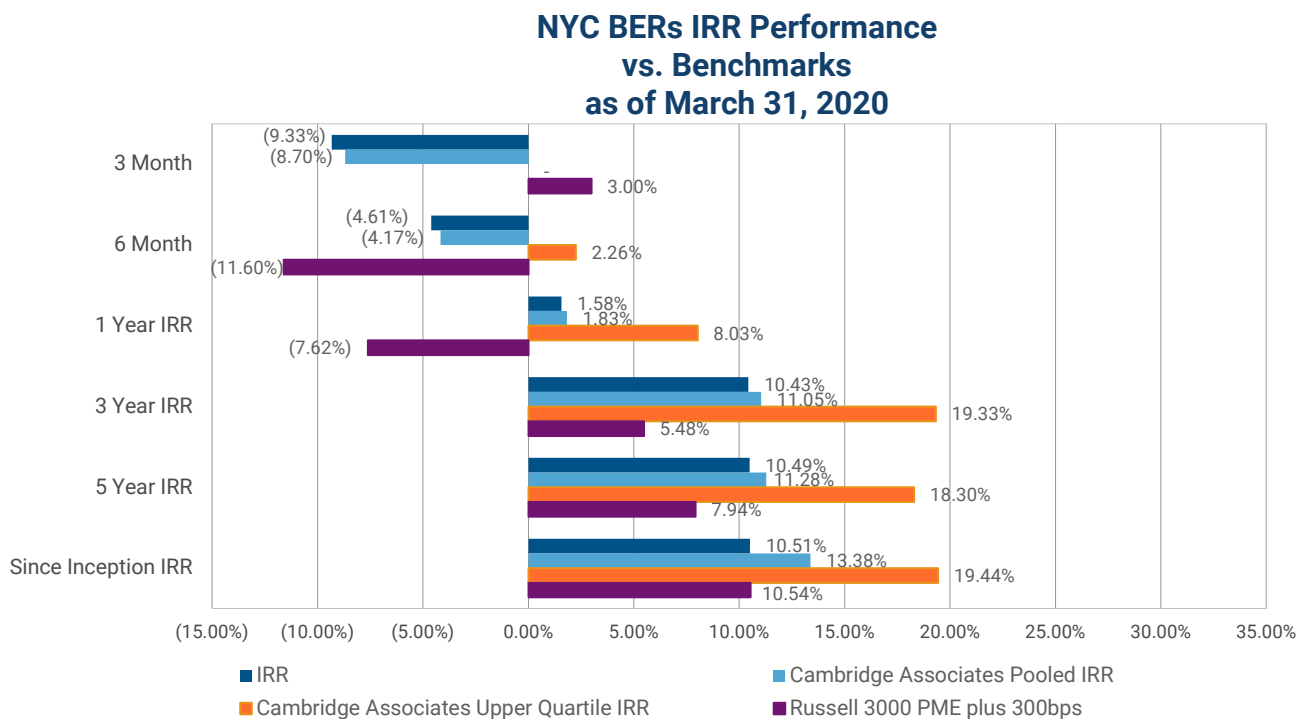
ICG Strategic Co-Investment Fund III, L.P. (\$4.4 million) The fund, a co-investment sleeve of ICG Strategic Equity Fund III, L.P., will primarily pursue sponsored secondary transactions, as well as other related transaction types, to gain access to quality assets in structurally challenged portfolios while providing whole-fund liquidity solutions to limited partners.

NYC-Northbound Emerging Managers Program, L.P. (\$25.0 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, and Cambridge Associates Upper Quartile IRR, as well as the Russell 3000 Total Return Public Market Equivalent (“PME+”) plus 300 bps.



Note: Private Equity benchmark is provided by Cambridge Associates and reflects U.S. Buyout Funds Pooled IRR and Upper Quartile IRR as of March 31, 2020, for funds with vintage years 2005, 2006, 2009, 2012, 2013, 2014, 2015, 2016, 2017, 2018, and 2019. PME+ is the Russell 3000 Total Return Index and incorporates the PME+ methodology. This calculation includes a 3.0% 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 164 basis points from the prior quarter, with the Portfolio generating an IRR of 10.51%.
 - Relative to benchmarks, the since inception IRR is underperforming the Cambridge Associates Pooled IRR by 287 basis points, the Cambridge Associates Upper Quartile IRR by 893 basis points and the Russell 3000 PME+ plus 300 basis points premium by 3 basis points.
- Performance on a one-year basis for the first quarter 2020 decreased 1,492 basis points from the prior quarter, with the Portfolio generating an IRR of 1.58%.
 - Relative to the benchmarks, the one-year IRR is outperforming the Russell 3000 PME+ by 920 basis points, but is underperforming the Cambridge Associates Pooled IRR by 25 basis points and the Cambridge Associates Upper Quartile IRR by 645 bps.



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	\$414.6	\$443.4	\$455.9	\$478.9	\$414.6
Paid-In Capital	19.5	26.8	34.6	19.6	100.5
Distributions	(12.2)	(20.6)	(35.6)	(11.9)	(80.3)
Net Value Change	21.5	6.3	24.0	(45.0)	6.8
Ending Market Value	\$443.4	\$455.9	\$478.9	\$441.6	\$441.6
Unfunded Commitments	\$374.2	\$364.0	\$349.1	\$342.4	\$342.4
Total Exposure	\$817.6	\$819.9	\$828.0	\$784.0	\$784.0
Point-to-Point IRR	5.16%	1.41%	5.23%	(9.33%)	1.58%
Since Inception IRR	12.12%	11.91%	12.22%	10.51%	10.51%

- Over the past twelve months, the Portfolio has experienced a net value gain of \$6.8 million.
- Contributions of \$100.5 million outpaced distributions of \$80.3 million during the twelve months ending March 31, 2020.
- The Portfolio experienced a point-to-point IRR of 1.58% 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	IRR	Cambridge Associates Median IRR ⁽¹⁾	Cambridge Associates Upper IRR ⁽¹⁾
Corporate Finance/Buyout	\$424,719,756	11.32%	11.60%	18.68%
Corporate Finance/Buyout - Mega	202,037,405	9.76%	11.05%	15.20%
Corporate Finance/Buyout - Large	143,782,351	15.17%	10.60%	17.31%
Corporate Finance/Buyout - Mid	46,500,000	5.29%	10.80%	18.06%
Corporate Finance/Buyout - Small	32,400,000	4.27%	12.30%	19.78%
Co-Invest ⁽¹⁾	58,571,638	10.57%	7.30%	13.60%
Growth Equity	101,000,000	10.95%	14.91%	22.52%
Secondaries	110,715,000	13.61%	10.87%	16.72%
Special Situations	180,000,000	10.54%	10.25%	19.59%
Venture Capital	19,000,000	5.25%	4.00%	10.96%

⁽¹⁾Co-Invest reflects 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, the Cambridge Associates Upper Quartile IRR, and the Russell 3000 Public Market Equivalent.

Performance by Vintage Year						
Vintage Year	Capital Committed	IRR	Cambridge Associates Median IRR ⁽¹⁾	Cambridge Associates Upper IRR ⁽¹⁾	PME Return ⁽²⁾	PME Spread ⁽³⁾
2005	\$57,000,000	8.20%	8.16%	11.99%	8.40%	(0.20%)
2006	44,000,000	8.01%	8.80%	15.81%	10.44%	(2.43%)
2009	45,000,000	15.17%	22.27%	26.24%	10.64%	4.53%
2012	40,000,000	16.42%	16.48%	23.29%	10.25%	6.17%
2013	93,200,000	8.64%	13.19%	17.88%	6.60%	2.04%
2014	94,127,221	15.70%	14.50%	20.18%	6.65%	9.05%
2015	93,650,533	12.97%	11.86%	16.83%	2.89%	10.09%
2016	40,500,000	12.20%	8.11%	14.48%	0.67%	11.53%
2017	87,389,316	4.34%	10.23%	21.61%	(6.10%)	10.44%
2018	148,182,657	N/M	N/M	N/M	N/M	N/M
2019	134,456,667	N/M	N/M	N/M	N/M	N/M
2020	16,500,000	N/M	N/M	N/M	N/M	N/M

⁽¹⁾ Cambridge Associates Benchmark - U.S. Buyouts as of 3/31/20.

⁽²⁾ PME Return is the Russell 3000 Total Return Index and incorporates the PME+ methodology.

⁽³⁾ PME Spread is the percentage difference between the IRR and PME Benchmark for each respective partnership.



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	\$421,766,667	\$271,525,133	\$134,990,439	\$213,224,891	10.35%	1.28x
Western Europe	127,899,727	81,899,632	21,119,122	79,362,696	11.95%	1.23x
Global/Rest of World	344,340,000	235,922,924	215,650,951	148,977,397	10.47%	1.55x
Total	\$894,006,394	\$589,347,689	\$371,760,512	\$441,564,984	10.51%	1.38x

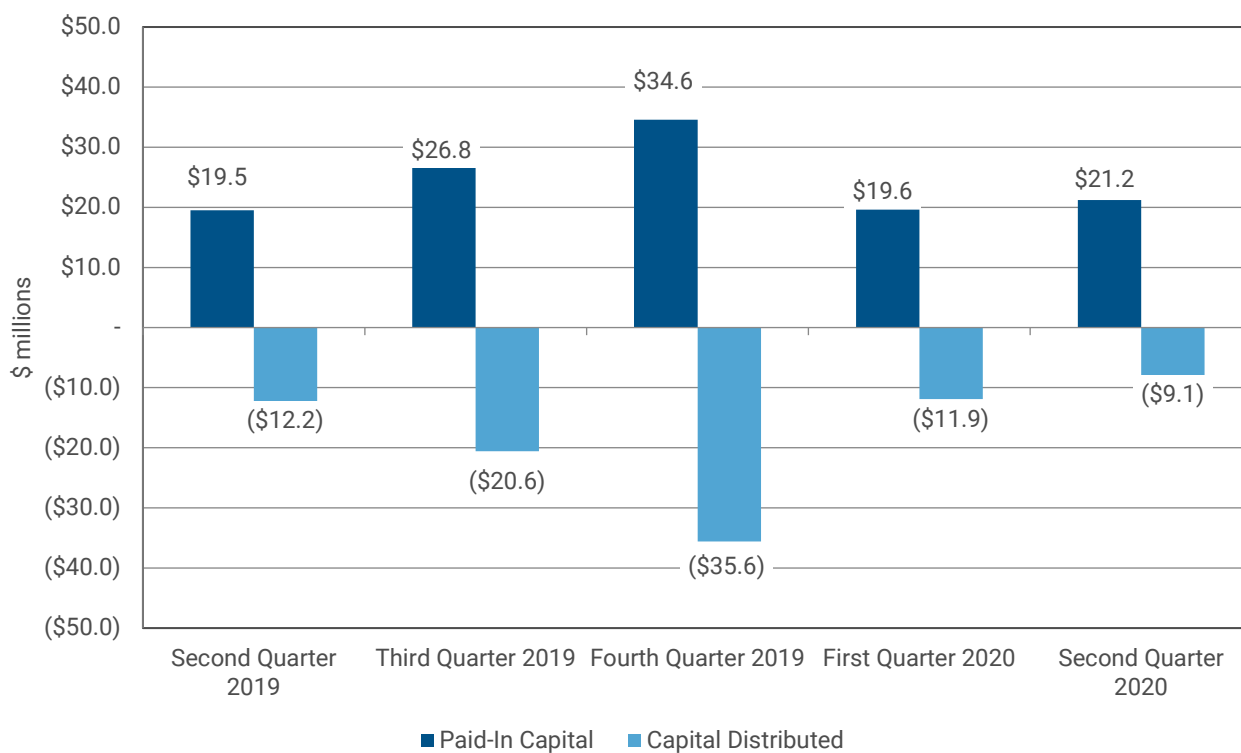
⁽¹⁾Prior to a partnership being 75% drawn, region focus is based on the GP-stated geographic strategy. Subsequent to a partnership being 75% drawn, fund geographic focus is based on actual portfolio company exposure by total invested. Partnerships with less than 75% of total invested capital allocated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

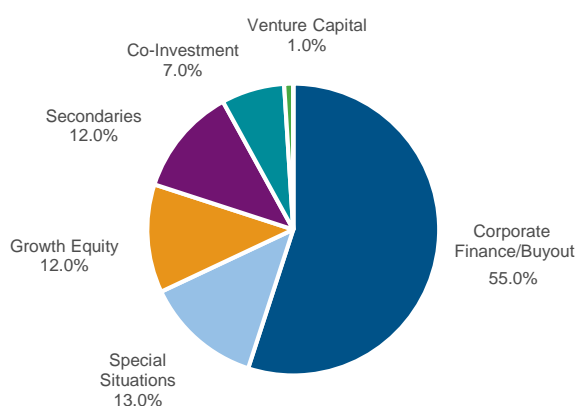




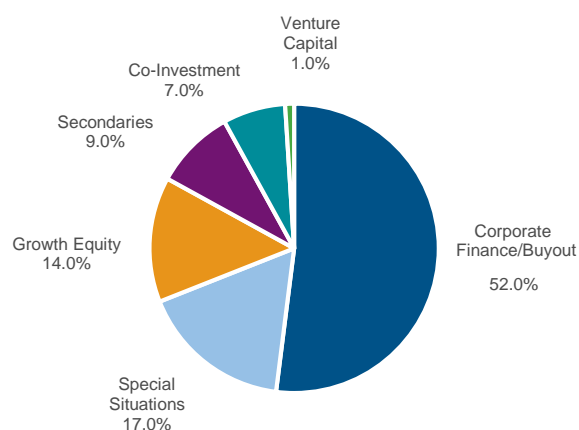
Portfolio Exposures

The pie chart below represents 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, providing a snapshot of the Portfolio's future diversification. Strategic exposure takes into account the strategies for each underlying partnership in the funds-of-funds within the BERS Portfolio. Geography is measured by the Portfolio's exposed market value of the underlying portfolio holdings.

**Strategic Diversification
by Total Exposure
As of March 31, 2020**



**Strategic Diversification
by Market Value
As of March 31, 2020**



As of March 31, 2020

	Sum of Current Exposed Market Value	% of Total
North America	\$319.5	64%
Canada	\$6.8	1%
U.S. (non-NY State)	\$290.8	59%
U.S. (NY State)	\$21.9	4%
New York City	\$9.6	2%
Non-New York City	\$12.3	2%
Western Europe	\$105.3	21%
Rest of World	\$45.2	9%
Asia	\$26.5	5%
Total	\$496.5	100%

- The Portfolio is focused in the Corporate Finance/Buyout strategy, with 55% of the total exposure attributable to this strategy.
- With respect to geography, the Portfolio is concentrated in North America, with 64% of the Portfolio's underlying market value attributable to this region.



Hamilton Lane

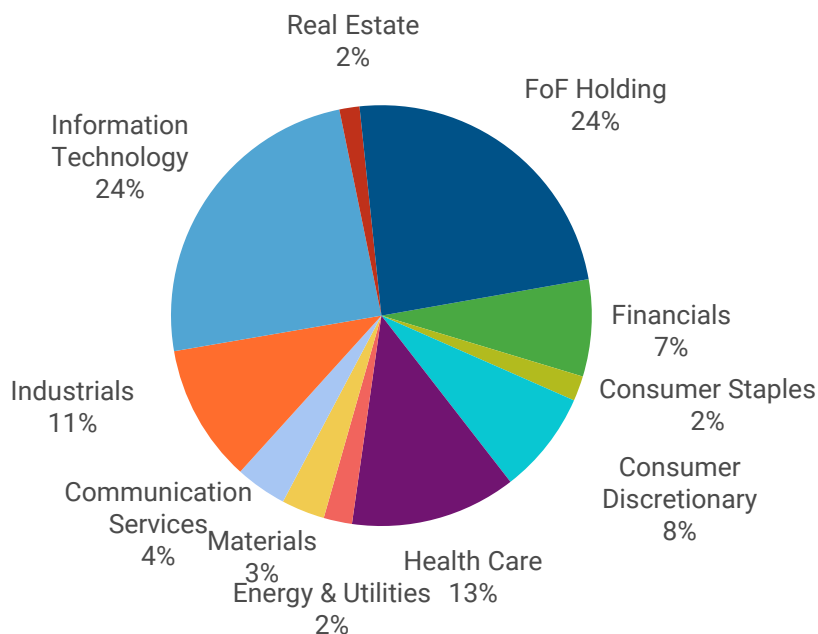
- The remaining 36% of the Portfolio's exposure is diversified between Western Europe, Asia and 'Rest-of-World'.
- Roughly 4% of the Portfolio's current exposed market value is based in New York, with 2% based in New York City companies and fund managers.



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 and fund managers.

- The Portfolio has a large exposure to the FoF Holding sector (24%). FoF Holding exposure is expected to reduce as the Portfolio continues to make direct private equity fund commitments.
 - The Portfolio's exposure to FoF Holding has increased from 22% to 24% over the quarter ending March 31, 2020

Underlying Investment Diversification by Industry As of March 31, 2020



NYC Board of Education Retirement System

First Quarter 2020 Report



Section 2:

Portfolio Assessment

NYC Board of Education Retirement System
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	PME Return ²	PME Spread ³
Active Investments										
2005	Mesrow Financial Private Equity Partnership Fund III, L.P.	7/20/2006	\$57,000,000	\$55,100,648	\$82,966,991	\$9,510,878	1.68x	8.20%	8.40%	(0.20%)
2006	Mesrow Financial Private Equity Partnership Fund IV, L.P.	3/31/2008	25,000,000	22,973,154	31,022,289	9,196,411	1.75x	10.02%	11.55%	(1.53%)
2006	New York Fairview Private Equity Fund, L.P.	7/14/2006	19,000,000	17,700,307	19,981,120	3,671,309	1.34x	5.25%	8.95%	(3.70%)
2009	Mesrow Financial Private Equity Partnership Fund V, L.P.	3/7/2011	45,000,000	39,622,655	43,432,954	32,932,520	1.34x	15.17%	10.64%	4.53%
2012	Platinum Equity Capital Partners III, L.P.	1/14/2013	15,000,000	14,911,803	20,685,245	5,782,556	1.77x	34.92%	10.06%	24.86%
2012	Warburg Pincus Private Equity XI, L.P.	7/17/2012	25,000,000	25,676,063	26,181,185	13,169,523	1.53x	11.40%	10.49%	0.91%
2013	Apollo Investment Fund VIII, L.P.	12/11/2013	20,000,000	18,582,964	9,080,467	13,716,525	1.23x	7.19%	7.31%	(0.12%)
2013	Carlyle Partners VI, L.P.	7/3/2013	20,000,000	21,182,128	9,128,766	17,643,176	1.26x	8.01%	6.37%	1.64%
2013	Landmark Equity Partners XV, L.P.	10/30/2013	19,000,000	14,377,476	10,899,976	7,865,896	1.31x	12.50%	7.09%	5.41%
2013	Landmark Equity Partners XV, L.P. - Side Car	12/24/2013	6,000,000	5,333,249	3,988,440	3,831,616	1.47x	15.05%	5.45%	9.61%
2014	CVC Capital Partners VI, L.P.	2/18/2014	20,477,221	17,736,127	8,608,838	17,954,987	1.50x	15.28%	5.17%	10.10%
2013	Crestview Partners III (Co-Investment B), L.P.	3/3/2015	15,000,000	10,560,347	6,396,772	6,741,276	1.24x	9.06%	7.21%	1.85%
2013	Crestview Partners III (Co-Investment B), L.P.	12/17/2015	5,000,000	5,181,674	250,760	4,335,098	0.89x	(4.49%)	5.60%	(10.09%)
2014	ASF VI, L.P.	5/9/2014	15,000,000	12,114,181	12,968,815	3,755,548	1.38x	11.51%	10.33%	1.18%
2014	ASF VI NYC Co-Invest, L.P.	5/9/2014	5,000,000	4,012,664	3,966,067	1,651,126	1.40x	11.81%	6.99%	4.82%
2014	Carlyle Partners VI, L.P. - Side Car	9/23/2014	2,200,000	1,600,688	92,959	1,345,021	0.90x	(2.66%)	7.35%	(10.00%)
2014	Lexington Capital Partners VIII, L.P.	1/8/2015	20,000,000	17,938,407	9,609,719	13,679,267	1.30x	15.11%	4.40%	10.71%
2014	Vista Equity Partners Fund V, L.P.	9/8/2014	25,000,000	30,544,647	30,048,486	24,758,520	1.79x	20.28%	7.18%	13.11%
2015	Centerbridge Capital Partners III, L.P.	5/21/2015	2,500,000	2,051,580	881,717	1,864,904	1.34x	14.11%	3.40%	10.71%
2015	Siris Partners III, L.P.	5/4/2015	3,500,000	3,576,900	1,639,497	2,883,798	1.26x	12.18%	3.78%	8.40%
2012	NYCBERS - 2012 Emerging Manager Program*	10/31/2014	14,650,000	14,501,842	3,845,619	15,234,903	1.32x	9.39%	6.42%	2.97%
2015	American Securities Partners VII, L.P.	7/8/2016	8,000,000	6,938,232	1,107,756	4,327,061	0.78x	(11.98%)	4.95%	(16.93%)
2015	ASF VII, L.P.	12/29/2015	10,000,000	5,819,185	1,258,699	5,777,283	1.21x	13.02%	0.96%	12.06%
2015	ASF VII B NYC Co-Invest, L.P.	12/29/2015	6,000,000	3,477,479	937,376	4,687,219	1.62x	26.91%	(2.42%)	29.38%
2015	NYCBERS - 2015 Emerging Manager Program**	2/22/2016	37,250,000	18,423,790	2,707,145	18,490,410	1.15x	30.95%	18.13%	12.82%
2015	Warburg Pincus Private Equity XII, L.P.	12/21/2015	21,500,000	20,662,598	2,107,945	23,082,196	1.22x	10.14%	0.63%	9.51%
2015	Welsh, Carson, Anderson & Stowe XII, L.P.	8/26/2015	10,000,000	8,961,878	5,198,306	8,607,208	1.54x	21.43%	4.17%	17.27%
2015	Bridgepoint Europe V, L.P.	2/8/2016	8,563,826	8,344,591	2,959,961	7,462,978	1.25x	10.21%	4.45%	5.77%
2015	Bridgepoint Europe X Co-Invest	8/16/2016	2,905,075	2,701,297	1,186,252	3,438,588	1.71x	24.69%	0.70%	23.99%
2015	EQT VII, L.P.	1/8/2016	16,681,633	16,802,072	7,854,551	14,404,022	1.32x	13.59%	4.05%	9.53%
2016	Vista Equity Partners Fund VI, L.P.	6/28/2016	16,000,000	17,774,277	4,164,227	19,393,665	1.33x	13.17%	3.42%	9.75%
2016	Apax IX USD, L.P.	5/12/2017	13,000,000	12,005,757	341,848	14,501,096	1.24x	15.19%	(4.70%)	19.89%
2016	Platinum Equity Capital Partners IV, L.P.	3/21/2017	11,500,000	10,292,110	3,176,847	7,907,141	1.08x	5.40%	(1.08%)	6.48%
2017	Ares Corporate Opportunities Fund V, L.P.	6/22/2017	10,000,000	8,614,370	1,072,064	7,578,371	1.00x	0.31%	(4.66%)	4.97%
2017	Green Equity Investors VII, L.P.	5/12/2017	10,000,000	7,760,545	89,576	8,765,649	1.14x	8.31%	(3.78%)	12.09%
2017	BC European Capital X, L.P.	12/14/2017	11,305,666	9,675,282	189,057	9,545,361	1.01x	0.52%	(8.79%)	9.31%
2017	BC European Capital X Metro Co-Investment L.P.	3/24/2017	4,583,650	4,235,129	28,855	4,674,472	1.11x	7.05%	(7.16%)	14.20%
2017	KKR Americas Fund XII, L.P.	2/27/2018	16,000,000	7,664,350	105,486	8,002,009	1.06x	3.97%	(4.73%)	8.70%
2017	Palladium Equity Partners V, L.P.	2/11/2019	10,000,000	3,340,381	33,399	2,678,017	0.81x	(27.88%)	(11.05%)	(16.83%)
2017	Warburg Pincus Financial Sector, L.P.	1/5/2018	13,000,000	7,198,750	689,605	6,821,172	1.04x	4.00%	(7.02%)	11.02%
2018	CVC Capital Partners VII, L.P.	6/30/2018	18,840,153	9,482,923	133,047	9,266,548	0.99x	N/A	N/A	N/A
2018	Apollo Investment Fund IX, L.P.	3/15/2019	32,000,000	5,814,704	59,683	5,239,220	0.91x	N/A	N/A	N/A
2018	EQT VIII SCSP	8/10/2018	12,720,031	5,701,920	158,561	6,021,830	1.08x	N/A	N/A	N/A
2018	EQT VIII SCSP (Co-Invest)	11/2/2018	4,637,094	2,564,675	-	2,732,158	1.07x	N/A	N/A	N/A
2018	Siris Partners IV, L.P.	3/15/2019	10,000,000	4,599,281	-	3,776,549	0.82x	N/A	N/A	N/A
2018	Bridgepoint Europe VI, L.P.	4/1/2019	13,781,226	2,710,152	-	2,395,938	0.88x	N/A	N/A	N/A
2018	Bridgepoint Europe VI Co-Invest	5/7/2019	3,454,153	812,745	-	683,646	0.84x	N/A	N/A	N/A
2018	Platinum Equity Small Cap Fund, L.P.	6/27/2018	10,000,000	2,271,824	25,020	794,355	0.36x	N/A	N/A	N/A
2018	Platinum Equity Capital Partners IV, L.P. (Co-Invest)	9/7/2018	1,500,000	1,052,043	209,317	742,721	0.90x	N/A	N/A	N/A
2018	Vista Equity Partners Fund VII, L.P.	2/13/2019	20,500,000	5,179,264	20,721	4,811,599	0.93x	N/A	N/A	N/A
2019	Crestview Partners IV (FF), L.P.	N/A	2,666,667	-	-	4,321	N/A	N/A	N/A	N/A
2019	Crestview Partners IV, L.P.	N/A	8,000,000	-	-	2,041	N/A	N/A	N/A	N/A
2019	WCAS XIII, L.P.	3/14/2019	10,000,000	625,403	-	313,211	0.50x	N/A	N/A	N/A
2019	KKR European Fund V, L.P. - USD	1/15/2020	9,950,000	1,132,720	-	782,169	0.69x	N/A	N/A	N/A
2019	ASF VIII, L.P.	3/15/2019	21,000,000	4,983,706	62	5,373,372	1.08x	N/A	N/A	N/A
2019	ASF VIII B NYC Co-Invest, L.P.	3/15/2019	10,500,000	513,119	-	835,916	1.63x	N/A	N/A	N/A
2019	Warburg Pincus Global Growth, L.P.	3/26/2019	15,000,000	2,828,825	11,250	2,603,704	0.92x	N/A	N/A	N/A
2019	Lindsay Goldberg V, L.P.	N/A	10,500,000	-	-	-	N/A	N/A	N/A	N/A
2019	LCP IX Co-Invest Partners B, L.P.	N/A	4,125,000	-	-	(3,828)	N/A	N/A	N/A	N/A
2019	Lexington Capital Partners IX, L.P.	12/20/2019	12,375,000	876,402	156,146	1,280,763	1.64x	N/A	N/A	N/A
2019	Apax X, L.P.	N/A	12,500,000	-	-	(214,844)	N/A	N/A	N/A	N/A
2019	ICG Strategic Equity Fund III LP	3/4/2020	13,340,000	119,331	-	338,076	2.83x	N/A	N/A	N/A
2019	NYCBERS - 2019 Emerging Manager Program***	9/25/2019	39,100,000	1,827,077	101,069	1,850,564	1.07x	N/A	N/A	N/A
2020	Clearlake Capital Partners VI, L.P.	N/A	10,000,000	-	-	-	N/A	N/A	N/A	N/A
2020	FTV VI, L.P.	3/18/2020	3,500,000	280,000	-	266,181	0.95x	N/A	N/A	N/A
Total Portfolio			\$925,606,394	\$589,347,688	\$371,760,512	\$441,564,984	1.38x	10.51%	7.54%	2.98%
Vintage Year	Investment	First Drawdown	Committed Capital	Paid-In Capital	Distributed Capital	Market Value	Multiple	IRR	PME Return ²	PME Spread ³
Commitments Closed Subsequent to March 31, 2020										
2020	CVC Capital Partners VIII, L.P.	N/A	25,389,256	-	-	-	N/A	N/A	N/A	N/A
2020	ICG Strategic Equity Co-Investment Fund III LP	N/A	4,444,119	-	-	-	N/A	N/A	N/A	N/A
2020	One Rock Capital Partners III, L.P.	N/A	25,000,000	-	-	-	N/A	N/A	N/A	N/A
2020	NYC-Northbound Emerging Managers Program, L.P.	N/A	25,000,000	-	-	-	N/A	N/A	N/A	N/A
2020	Stellax Capital Partners II, L.P.	N/A	25,000,000	-	-	-	N/A	N/A	N/A	N/A
Total Con			\$104,833,375	-	-	-	N/A	N/A	N/A	N/A

*Please note that the NYCBERS - 2012 Emerging Manager Program includes the total commitment amount of \$14.65 million. The Program's original commitment amount of \$25 million was subsequently revised to \$14.65 million, all of which has been committed as of March 31, 2020. The remaining \$10.35 million was reallocated to the NYCBERS - 2015 Emerging Manager Program.

**Please note that the NYCBERS - 2015 Emerging Manager Program includes the total commitment amount of \$37.25 million. The Program's original commitment amount of \$40.35 million, which included the original \$30 million commitment and the \$10.35 million reallocation from the NYCBERS - 2012 Emerging Manager Program, was subsequently revised to \$37.25 million. As of March 31, 2020, all \$37.25 million has been committed, and the remaining \$3.1 million was reallocated to the NYCBERS - 2019 Emerging Manager Program.

***Please note that the NYCBERS - 2019 Emerging Manager Program commitment amount totals \$39.1 million, which includes the Program's original \$36 million commitment and the \$3.1 million reallocation from the NYCBERS - 2015 Emerging Manager Program. As of March 31, 2020, \$7.5 million has been committed.

² The 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.

³ PME 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.

NYC Board of Education Retirement System

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Section 3:

Funds-of-Funds Review



Mesirow Financial Private Equity Partnership Fund III, L.P.

Fund Overview

The Partnership, a 2005 vintage year Partnership, was formed on April 6, 2005 with the intent of investing capital in various private equity limited partnerships. As of March 31, 2020, the Partnership has invested in 40 underlying funds.

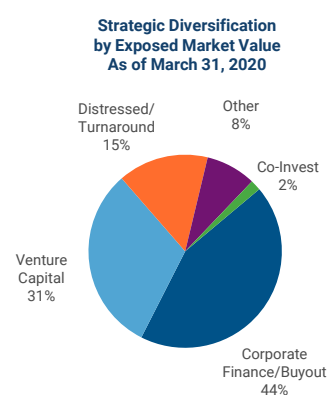
Partnership Summary

NYC Board of Education Retirement System committed \$57.0 million to the Mesirow Financial Private Equity Partnership Fund III, L.P. and as of March 31, 2020, has generated a 8.20% IRR and a Total Value Multiple of 1.68x from its investment. The Partnership is well diversified strategically.

Performance Summary			
\$ in millions	12/31/2019	3/31/2020	Change
Capital Commitment	\$57.0	\$57.0	-
Unfunded Commitment	\$2.3	\$2.3	-
Capital Contributed	\$55.1	\$55.1	-
Capital Distributed	\$83.0	\$83.0	-
Market Value	\$10.3	\$9.5	(\$0.8)
Total Value Multiple	1.69x	1.68x	(0.01x)
Since Inception IRR	8.32%	8.20%	(12 bps)

Time Horizon Performance				
6-Month IRR	1-Year IRR	3-Year IRR	5-Year IRR	Since Inception IRR
(3.18%)	(3.77%)	2.93%	1.95%	8.20%

*Strategic exposure to 'Other' consists of underlying partnerships for which investment strategies are not disclosed in the quarter end financial statements.



Performance Drivers

When compared to global private equity funds of the same vintage, Mesirow Financial Private Equity Partnership Fund III, L.P. is underperforming the upper quartile benchmark¹ by 540 bps and is outperforming the median quartile benchmark¹ by 90 bps on a since inception basis, as of March 31, 2020.

Outperformance of the median quartile benchmark¹ is being driven by nine underlying funds, all of which are being held above a 2.0x total value multiple as of March 31, 2020. The nine funds represent roughly 22.4% of underlying commitments and 41.8% of underlying market value.

Underperformance when compared to the upper quartile benchmark¹ is being driven by three underlying funds, both of which are being held below a 1.0x total value multiple as of March 31, 2020. The three funds represent roughly 4.7% of underlying commitments and 4.7% of underlying market value.

¹ThomsonOne/Cambridge – Global All Private Equity IRR as of March 31, 2020.



Mesirow Financial Private Equity Partnership Fund IV, L.P.

Fund Overview

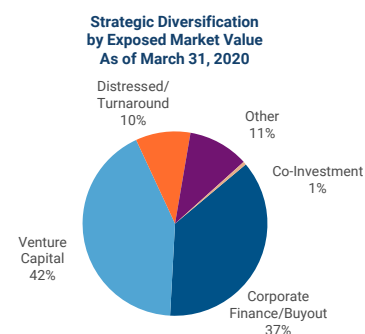
The Partnership, a 2006 vintage year Partnership, was formed on November 21, 2006 with the intent of investing capital in various private equity limited partnerships. As of March 31, 2020, the Partnership has invested in 46 underlying funds.

Partnership Summary

NYC Board of Education Retirement System committed \$25.0 million to the Mesirow Financial Private Equity Partnership Fund IV, L.P. and as of March 31, 2020, has generated a 10.02% IRR and a Total Value Multiple of 1.75x from its investment. The Partnership is well diversified strategically.

Performance Summary			
\$ in millions	12/31/2019	3/31/2020	Change
Capital Commitment	\$25.0	\$25.0	-
Unfunded Commitment	\$1.4	\$1.4	-
Capital Contributed	\$23.0	\$23.0	-
Capital Distributed	\$29.3	\$31.0	\$1.8
Market Value	\$10.3	\$9.2	(\$1.1)
Total Value Multiple	1.72x	1.75x	0.03x
Since Inception IRR	10.40%	10.02%	(38 bps)

Time Horizon Performance				
6-Month IRR	1-Year IRR	3-Year IRR	5-Year IRR	Since Inception IRR
(4.59%)	(0.44%)	7.99%	9.21%	10.02%



*Strategic exposure to 'Other' consists of underlying partnerships for which investment strategies are not disclosed in the quarter end financial statements.

Performance Drivers

When compared to global private equity funds of the same vintage, Mesirow Financial Private Equity Partnership Fund IV, L.P. is underperforming the upper quartile benchmark¹ by 358 bps and outperforming the median quartile benchmark¹ by 272 bps on a since inception basis, as of March 31, 2020.

Outperformance of the median quartile benchmark¹ is being driven by seventeen underlying funds, all of which are being held above a 2.0x total value multiple as of March 31, 2020. These seventeen funds represent roughly 38.8% of underlying commitments and 53.5% of underlying market value.

Underperformance when compared to the upper quartile benchmark is being driven by two underlying funds, both of which are being held below a 1.0x total value multiple as of March 31, 2020. The two funds represent roughly 5.6% of underlying commitments and 1.5% of underlying market value.

¹ThomsonOne/Cambridge – Global All Private Equity IRR as of March 31, 2020.



Mesirow Financial Private Equity Partnership Fund V, L.P.

Fund Overview

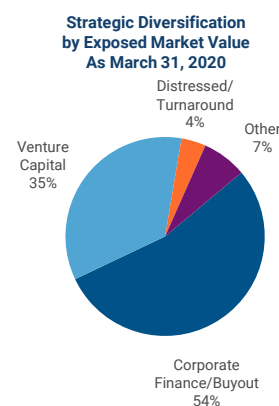
The Partnership, a 2009 vintage year Partnership, was formed on November 5, 2008 with the intent of investing capital in various private equity limited partnerships. As of March 31, 2020, the Partnership has invested in 51 underlying funds.

Partnership Summary

NYC Board of Education Retirement System committed \$45.0 million to the Mesirow Financial Private Equity Partnership Fund V, L.P. and as of March 31, 2020, has generated a 15.17% IRR and a Total Value Multiple of 1.84x from its investment. The Partnership is well diversified strategically.

Performance Summary			
\$ in millions	12/31/2019	3/31/2020	Change
Capital Commitment	\$45.0	\$45.0	-
Unfunded Commitment	\$5.4	\$5.4	-
Capital Contributed	\$38.9	\$38.9	-
Capital Distributed	\$36.5	\$38.5	\$2.0
Market Value	\$36.5	\$32.9	(\$3.6)
Total Value Multiple	1.88x	1.84x	(0.05x)
Since Inception IRR	16.37%	15.17%	(119 bps)

Time Horizon Performance				
6-Month IRR	1-Year IRR	3-Year IRR	5-Year IRR	Since Inception IRR
(4.17%)	3.59%	12.32%	14.15%	15.17%



*Strategic exposure to 'Other' consists of underlying partnerships for which investment strategies are not disclosed in the quarter end financial statements.

Performance Drivers

When compared to global private equity funds of the same vintage, Mesirow Financial Private Equity Partnership Fund V, L.P. is outperforming the upper quartile benchmark¹ by 157 bps and is outperforming the median quartile benchmark¹ by 787 bps on a since inception basis, as of March 31, 2020.

Outperforming of the upper and median quartile benchmark¹ is being driven by fifteen underlying funds, all of which are being held above a 2.0x total value multiple as of March 31, 2020. The fifteen funds represent roughly 32.6% of underlying commitments and 46.1% of underlying market value.

¹ThomsonOne/Cambridge – Global All Private Equity IRR as of March 31, 2020.



New York Fairview Private Equity Fund, L.P.

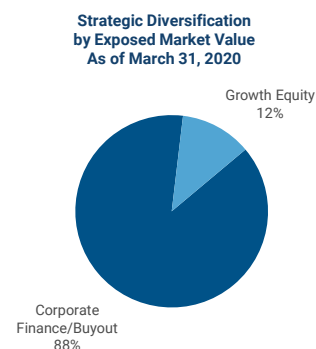
Fund Overview

The Partnership, a 2006 vintage year Partnership, was formed on May 22, 2006 with the intent of investing in emerging private equity funds with aggregate capital commitments of no more than \$300 million. As of March 31, 2020, the Partnership has invested in 6 underlying funds.

Partnership Summary

NYC Board of Education Retirement System committed \$19.0 million to the New York Fairview Private Equity Fund, L.P. and as of March 31, 2020 has generated a 5.25% IRR and a Total Value Multiple of 1.26x from its investment. The Partnership is heavily weighted towards Corporate Finance/Buyout, with roughly 88% of the underlying funds exposed market value attributable to this sector.

Performance Summary			
\$ in millions	12/31/2019	3/31/2020	Change
Capital Commitment	\$19.0	\$19.0	-
Unfunded Commitment	\$1.8	\$1.8	-
Capital Contributed	\$17.3	\$17.7	\$0.4
Capital Distributed	\$18.6	\$18.6	-
Market Value	\$5.1	\$3.7	(\$1.6)
Total Value Multiple	1.37x	1.26x	(0.11x)
Since Inception IRR	5.40%	5.25%	(16 bps)



Time Horizon Performance				
6-Month IRR	1-Year IRR	3-Year IRR	5-Year IRR	Since Inception IRR
(6.15%)	(6.09%)	(0.96%)	1.37%	5.25%

Performance Drivers

When compared to global private equity funds of the same vintage, New York Fairview Private Equity Fund, L.P. is underperforming the upper and median quartile benchmark¹ by 835 bps and 205 bps respectively, on a since inception basis, as of March 31, 2020.

Underlying fund performance has been unfavorable, with all six funds being held below 1.0x total value multiple as of March 31, 2020.

¹ThomsonOne/Cambridge – Global All Private Equity IRR as of March 31, 2020.

NYC Board of Education Retirement System

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Appendix A:

Glossary of Terms

NYC Board of Education Retirement System

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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.

NYC Board of Education Retirement System

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

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.

NYC Board of Education Retirement System

First Quarter 2020 Report



Appendix B:

Disclosure Statement

NYC Board of Education Retirement System

First Quarter 2020 Report

Non-public information contained in this report is confidential and intended solely for dissemination to NYC Board of Education Retirement System and/or its Affiliates. Hamilton Lane has prepared this report to enable NYC Board of Education Retirement System 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.



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Real Estate Quarterly Report (Public):



Quarterly Real Estate Report

For the period ended March 31, 2020



**Board of Education
Retirement System**

City of New York Board of Education Retirement System

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

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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.

Executive Summary

StepStone Group LP (“StepStone”) was engaged by City of New York Board of Education Retirement System (“NYCBERS”) to provide Real Estate services for prospective investment opportunities, as well as portfolio management on NYCBERS’ portfolio (the “Portfolio”). Inception date of the Portfolio was on December 2010.

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 9.7% at March 31, 2020, which is down 117 basis points quarter-over-quarter.

Performance Summary

	Q1 2020	Q4 2019	Q1 2019	Quarterly Change	Yearly Change
No. of Managers	28	28	26	0	2
No. of Investments	44	41	36	3	8
No. of Active Managers	28	28	26	0	2
No. of Active Investments	44	41	36	3	8
<i>Active investments only</i> <i>(in USD millions)</i>					
Committed Capital	607.5	567.9	520.3	39.6	87.2
Contributions	488.2	477.2	402.5	11.0	85.7
Distributions	275.4	264.8	216.0	10.6	59.3
Net Asset Value	373.2	388.4	345.7	-15.2	27.5
Total Gain	160.3	176.0	159.2	-15.6	1.2
Unfunded	199.0	168.9	185.2	30.1	13.8
Total Exposure	572.2	557.3	530.9	14.9	41.3
<i>Since Inception Returns, includes liquidated investments</i>					
DPI	0.6x	0.6x	0.5x	0.0x	0.0x
TVM Gross of Fees	1.40x	1.44x	1.47x	-0.04x	-0.07x
IRR Gross of Fees	11.5%	13.1%	13.7%	-1.6%	-2.2%
TVM Net of Fees	1.33x	1.37x	1.40x	-0.04x	-0.07x
IRR Net of Fees	9.7%	10.9%	11.5%	-1.2%	-1.8%

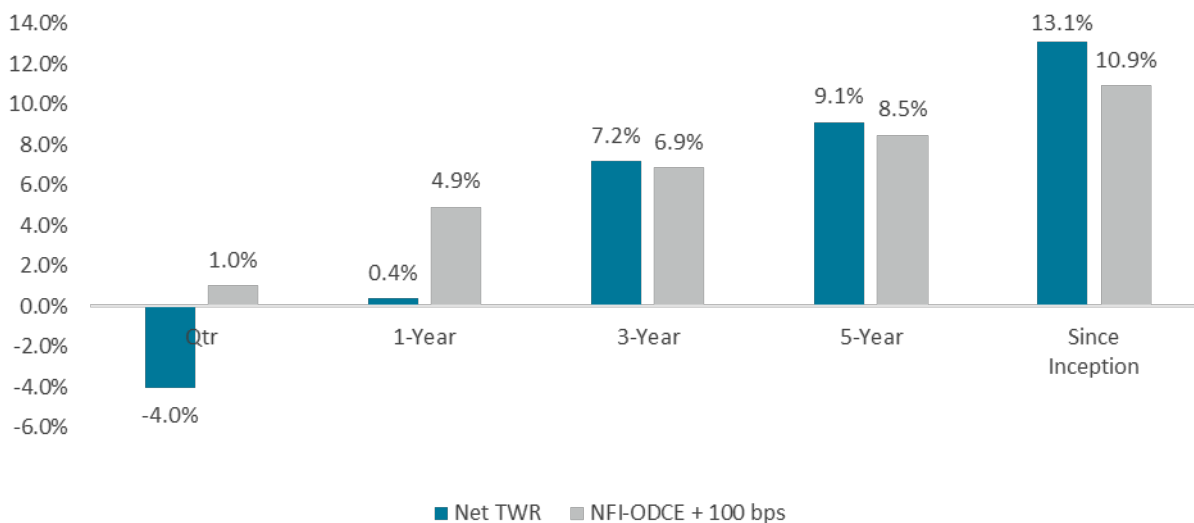
Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve comparable results or avoid substantial losses.

- 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.

TOTAL NET RETURNS vs. BENCHMARK
 (for the period ended March 31, 2020)



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)

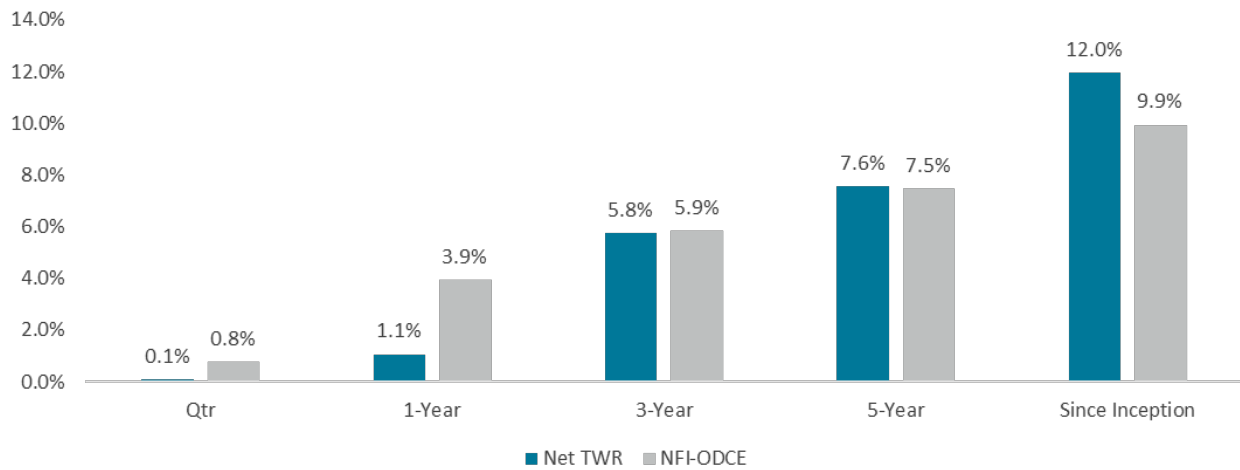
Allocation by Strategy	Net Asset Value		Unfunded		Total Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
Core	226.1	61%	53.9	27%	280.0	49%
Non-Core	147.1	39%	145.1	73%	292.2	51%
Total	373.2	100%	199.0	100%	572.2	100%
Emerging	10.5	3%	1.0	0%	11.4	2%
Debt	37.6	10%	30.7	15%	68.2	12%

Allocation by Region	Net Asset Value		Unfunded		Total Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
North America	319.5	86%	170.3	86%	489.9	86%
Europe	46.1	12%	24.6	12%	70.7	12%
Asia	7.0	2%	3.7	2%	10.7	2%
Rest of World	0.6	0%	0.3	0%	0.9	0%
Total	373.2	100%	199.0	100%	572.2	100%

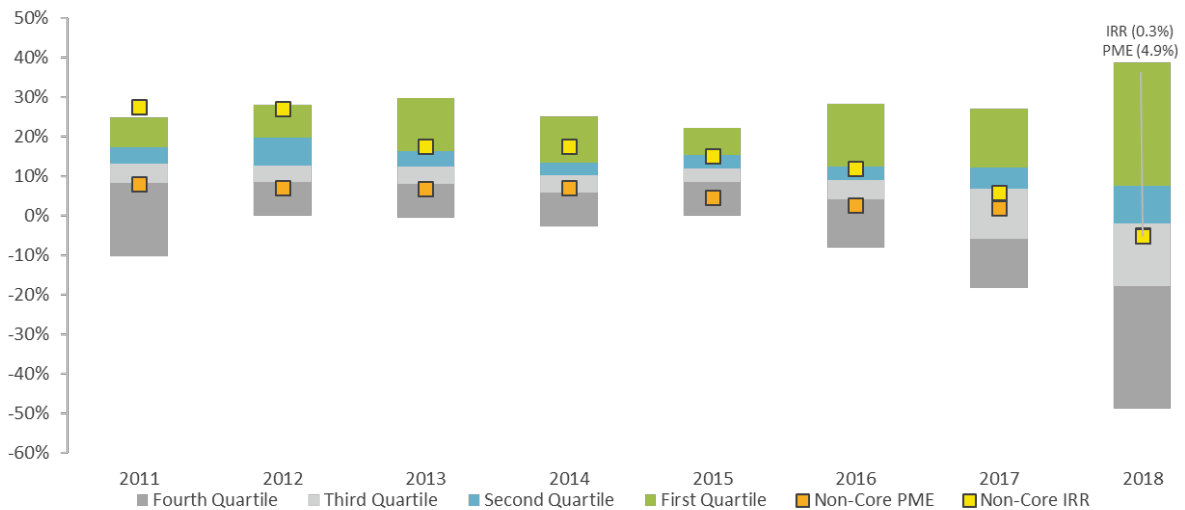
Core and Non-Core Performance vs Benchmarks

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 NET TWR vs. BENCHMARK



NON-CORE NET IRR vs PME RETURNS



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 Board of Education Retirement Systems has allocated 8.0% 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 BERS - Real Estate	
Total Plan Assets (\$)	\$6,141,000,000
Real Estate Allocation (%)	8.0%
Real Estate Allocation (\$)	\$491,280,000
Real Estate Core Allocation (%)	4.0%
Real Estate Core Allocation (\$)	\$245,640,000
Real Estate Non-Core Allocation (%)	4.0%
Real Estate Non-Core Allocation (\$)	\$245,640,000
No. of Active Managers	28
No. of Active Investments	44

Core/Core-Plus	
Net Asset Value	\$226,054,467
Unfunded	\$53,902,221
Commitment	\$259,446,307
Total Exposure	\$279,956,688
Total Exposure as a % of Target	114.0%
NAV as a % of Target	92.0%
% Plan Assets (NAV / Exposure)	3.7% / 4.6%

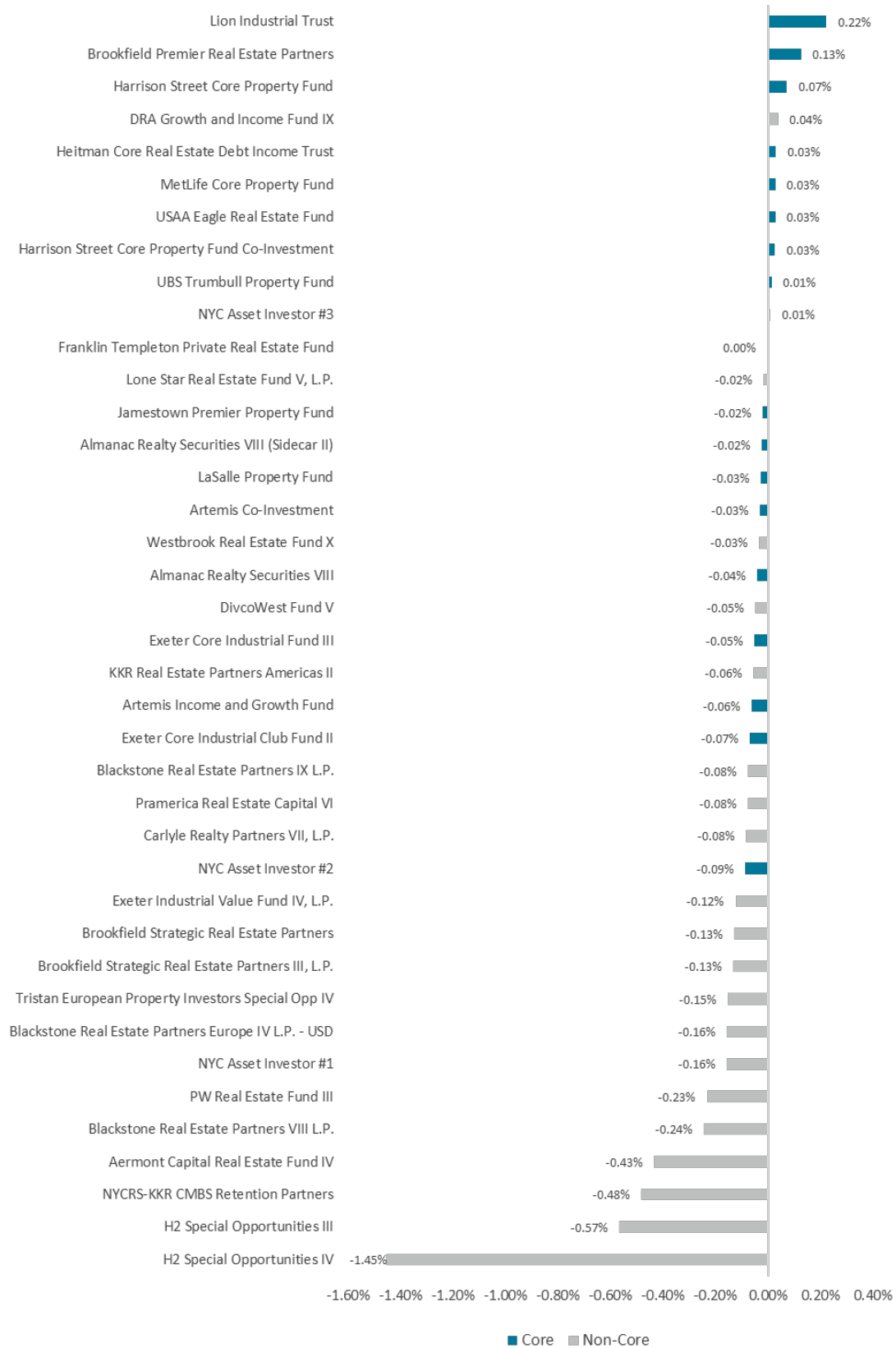
Non-Core	
Net Asset Value	\$147,136,543
Unfunded	\$145,060,520
Commitment	\$348,036,286
Total Exposure	\$292,197,064
Total Exposure as a % of Target	119.0%
NAV as a % of Target	59.9%
% Plan Assets (NAV / Exposure)	2.4% / 4.8%

Total Portfolio	
Net Asset Value	\$373,191,010
Unfunded	\$198,962,742
Commitment	\$607,482,594
Total Exposure	\$572,153,752
Total Exposure as a % of Target	116.5%
NAV as a % of Target	76.0%
% Plan Assets (NAV / Exposure)	6.1% / 9.3%

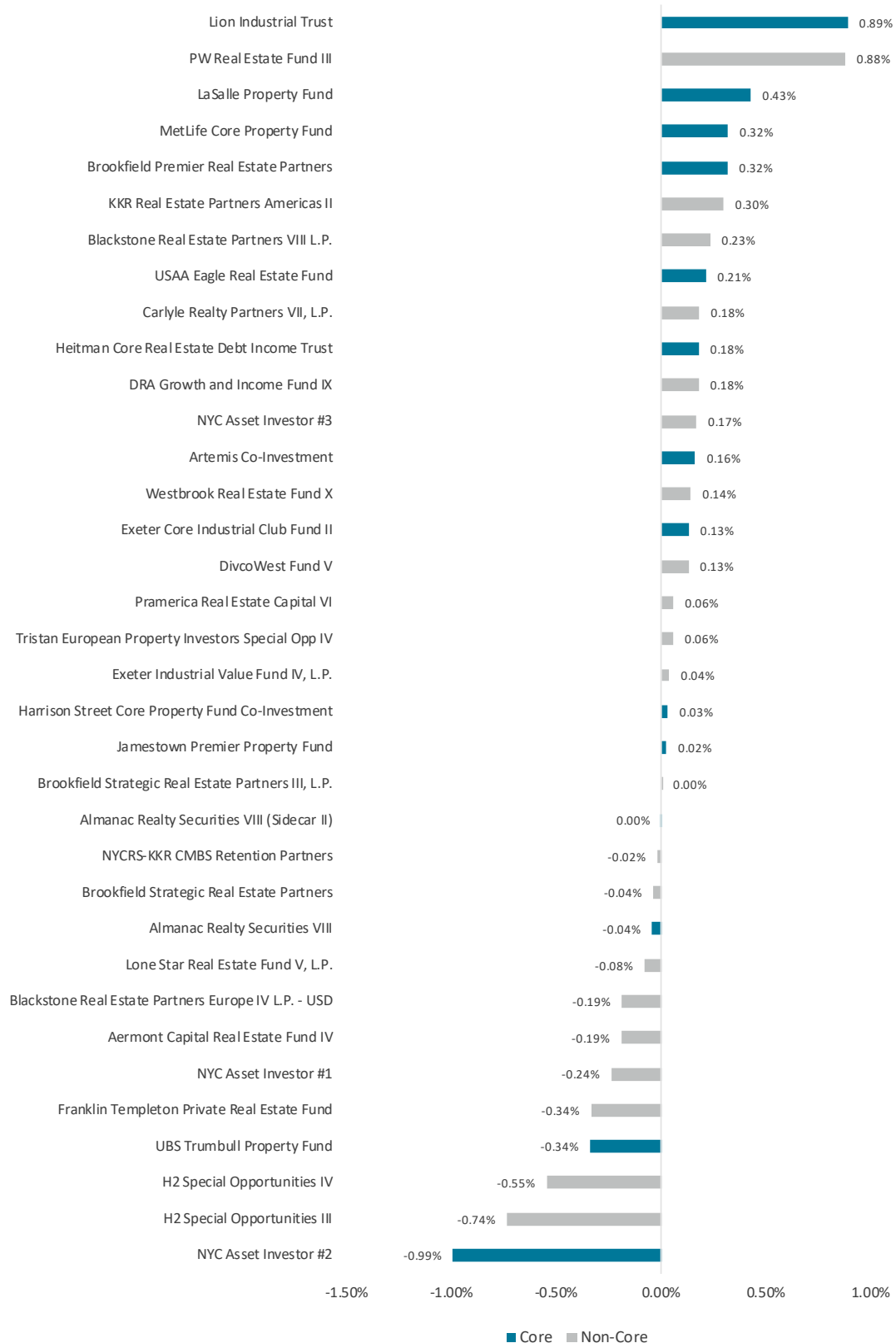
Net Returns	
Quarterly TWR	-4.0%
1-Year TWR	0.4%
2-Year TWR	4.1%
3-Year TWR	7.2%
5-Year TWR	9.1%
10-Year TWR	N/A
15-Year TWR	N/A
ITD TWR	13.1%
ITD Benchmark NFI-ODCE + 100 bps	10.9%
Net IRR	9.7%
TVM	1.3x

Note: Beginning in Q1 2020, Total, Core/Core-Plus, and Non-Core real estate allocations change to 8%, 4%, and 4%, respectively.

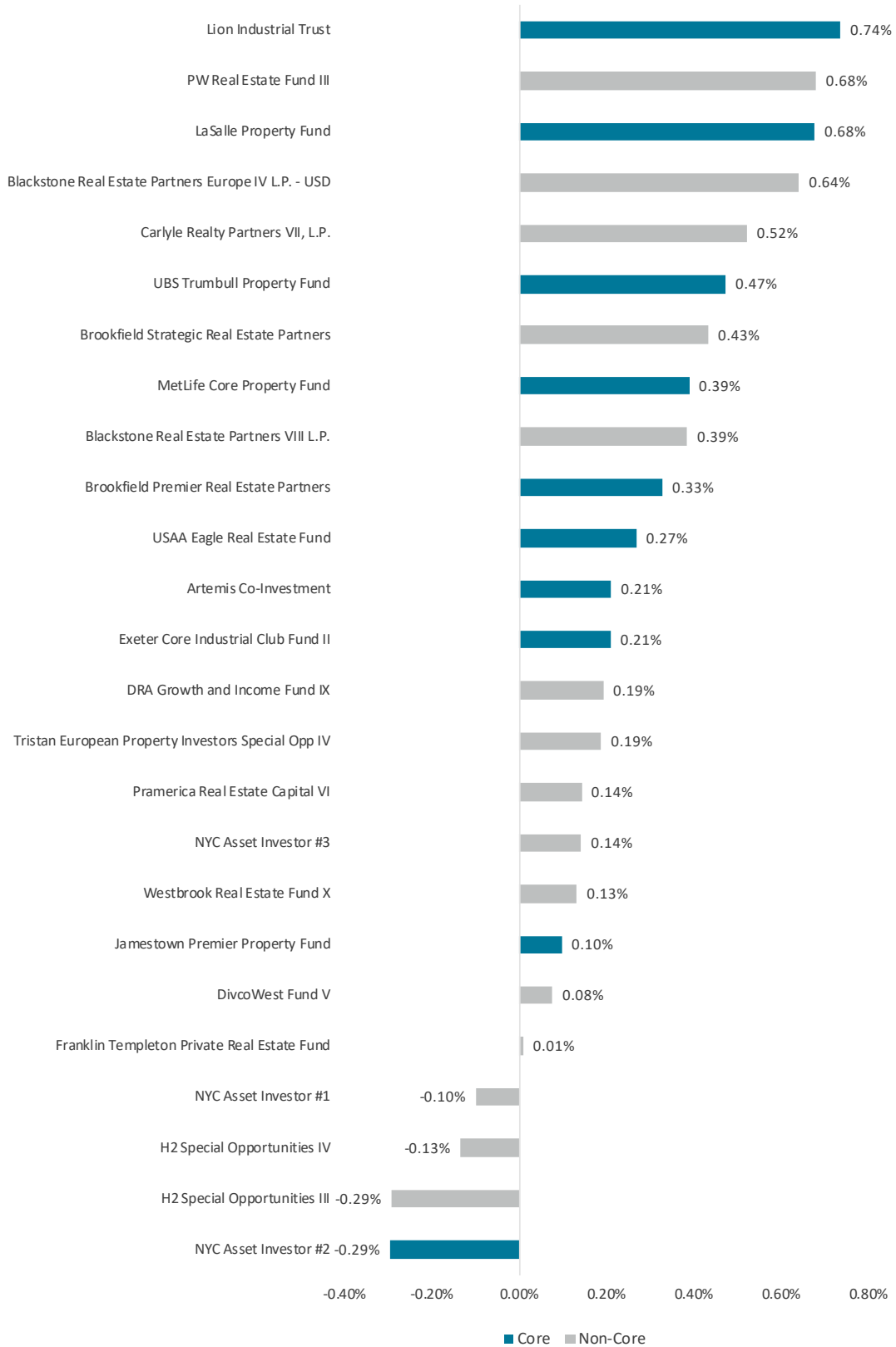
Percent Contribution to Current-Quarter Return



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 three, five-year and since inception time periods.
Portfolio Construction	Core/Core-Plus (4%)	Market value plus committed place the Portfolio at 48.9% Core/Core-Plus and 51.1% Non-Core. Based on market value, the Portfolio is 60.6% Core/Core-Plus and 39.4% Non-Core.
	Non-Core (4%)	
Real Estate Allocation	Target 8%	Market value plus committed capital place the Portfolio at 9.3% 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 (50.9%) is compliant.
Manager Exposure	15% of real estate allocation	All manager allocations are compliant.

Beginning in Q1-2020, Total, Core/Core-Plus, and Non-Core real estate allocations change to 8%, 4%, 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.

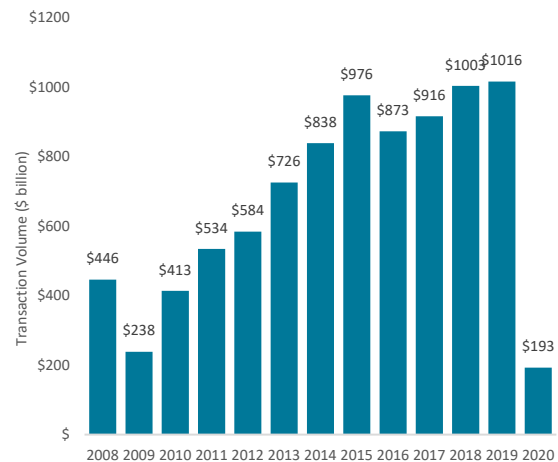
Uncertainty regarding the pandemic’s economic impact sent the Chicago Board Option Exchange’s Volatility Index (“VIX”) to an all-time high and countries across the world approve massive stimulus packages to help combat the global economic shutdown. Oil prices also plunged during the quarter, as talks 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.

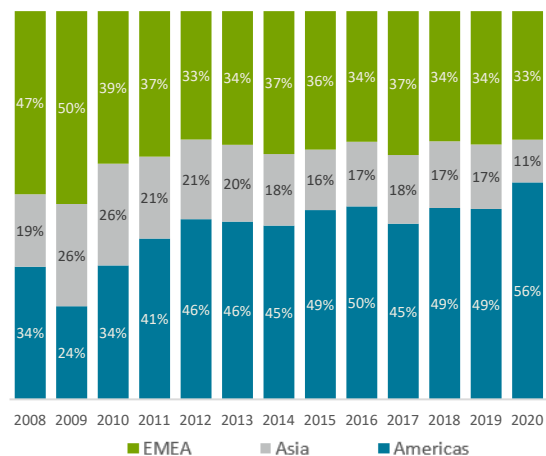
Figure 1 | Annual Global Transaction Volume



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.

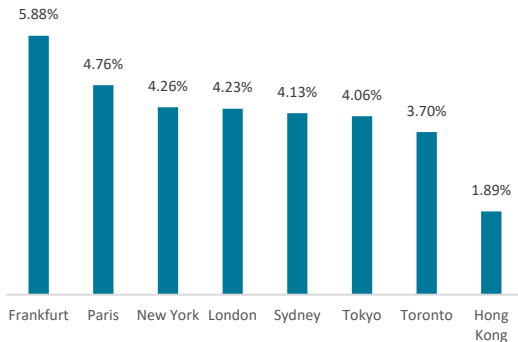
Figure 2 | Regional Share of Global Transaction Volume



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

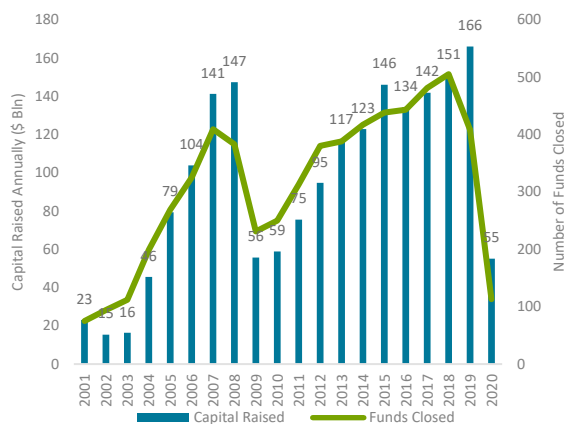


Source: Bloomberg (3/31/20)

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.

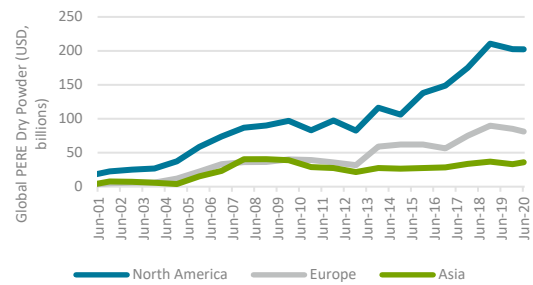
Figure 4 | Real Estate Funds Closed by Year



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.

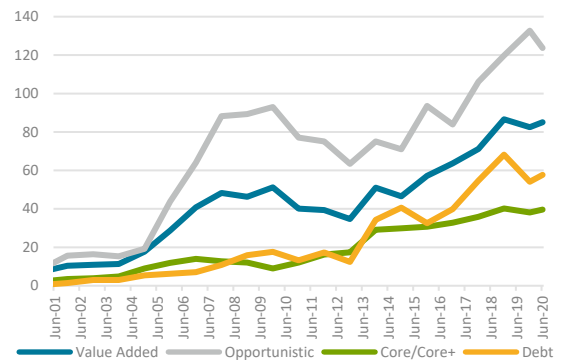
Figure 5 | Dry Powder – By Region



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

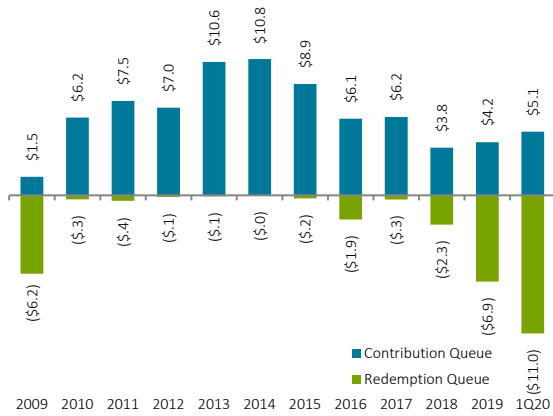


Source: Preqin (6/30/20)

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.

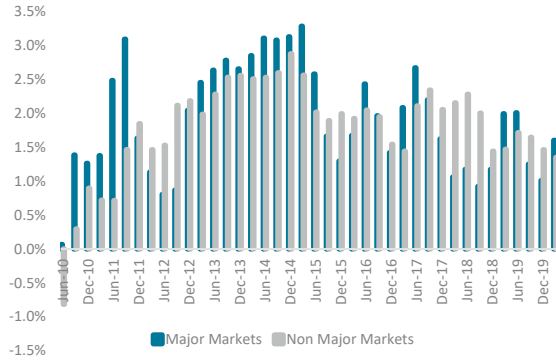
Figure 7 | Core Contribution and Redemption Queues (\$bil.)



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%).

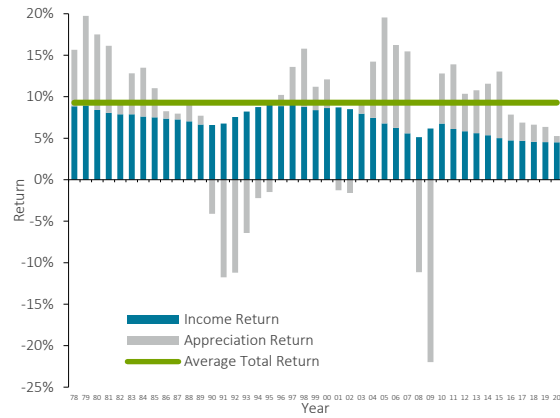
Figure 8 | Major vs Non-Major Market



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



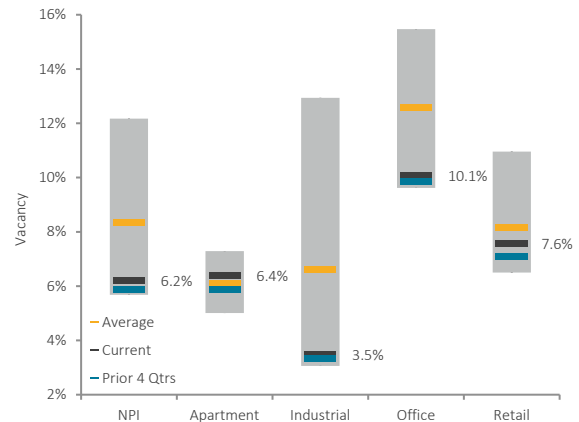
Source: NCREIF (3/31/20)

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%).

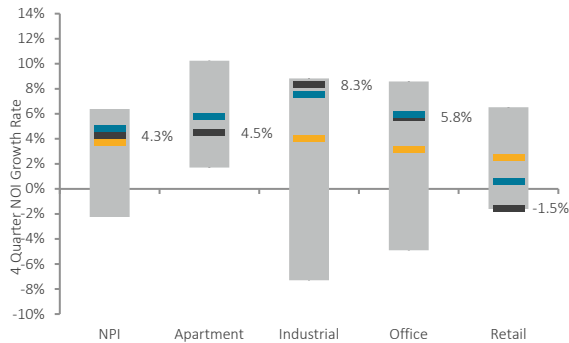
Figure 10 | US Vacancy



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%)

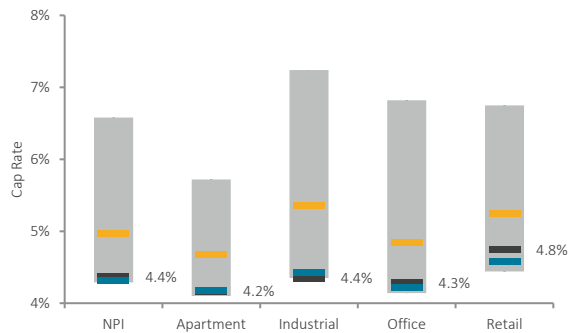
Figure 11 | Four Quarter NOI Growth



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\$11.0 million of contributions and received US\$10.6 million of distributions, for a net cash outflow of US\$0.5 million, compared to a net cash outflow of US\$11.7 million during the fourth quarter of 2019. Contributions decreased 68% from the prior quarter and decreased 44% from the first quarter of 2019. The Last-Twelve-Months (“LTM”) quarterly average of the Portfolio's contributions is US\$21.4 million. Distributions decreased 53% from the prior quarter and decreased 50% from the first quarter of 2019. The LTM quarterly average of the Portfolio's distributions is US\$14.8 million.

Recent Portfolio Activity

- During the first quarter of 2020, net of cash flow activity, the Portfolio's value decreased US\$15.6 million, or 4.2%, from the prior quarter. During the LTM period, net of cash flow activity, the Portfolio's value increased US\$1.2 million, or 0.3%, 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 \$25 million.

(in USD millions)

Fund Name	Month Closed	Sub-Strategy	Geographic Focus	Committed Capital
DivcoWest Fund VI	January 2020	Non-Core	North America	\$10
Exeter Industrial Value Fund V	February 2020	Non-Core	North America	\$5
KKR Real Estate Partners Europe II	February 2020	Non-Core	Europe	\$10

Subsequent Investment Commitments

- Following the first quarter of 2020, the Portfolio closed on the following investment commitment, totaling \$10 million.

(in USD millions)

Fund Name	Month Closed	Sub-Strategy	Geographic Focus	Committed Capital
Redacted Fund 1	April 2020	Core	North America	\$10

Since Inception Investment Performance

(in USD millions; includes all investments)

	Q1 2020	Q4 2019	Q1 2019	Quarterly Change	Yearly Change
No. of Managers	28	28	26	0	2
No. of Investments	44	41	36	3	8
Committed Capital	607.5	567.9	520.3	39.6	87.2
Contributions	488.2	477.2	402.5	11.0	85.7
Distributions	275.4	264.8	216.0	10.6	59.3
Net Asset Value	373.2	388.4	345.7	-15.2	27.5
Total Gain	160.3	176.0	159.2	-15.6	1.2
Unfunded	199.0	168.9	185.2	30.1	13.8
Total Exposure	572.2	557.3	530.9	14.9	41.3
DPI	0.6x	0.6x	0.5x	0.0x	0.0x
TVM Gross of Fees	1.40x	1.44x	1.47x	-0.04x	-0.07x
IRR Gross of Fees	11.5%	13.1%	13.7%	-1.6%	-2.2%
TVM Net of Fees	1.33x	1.37x	1.40x	-0.04x	-0.07x
IRR Net of Fees	9.7%	10.9%	11.5%	-1.2%	-1.8%

Portfolio Periodic Returns vs Benchmark

	Qtr	1-Year	3-Year	5-Year	Since Inception
Net TWR	-4.0%	0.4%	7.2%	9.1%	13.1%
NFI-ODCE + 100 bps	1.0%	4.9%	6.9%	8.5%	10.3%
Outperformance (Underperformance)	-5.0%	-4.5%	0.3%	0.6%	2.9%

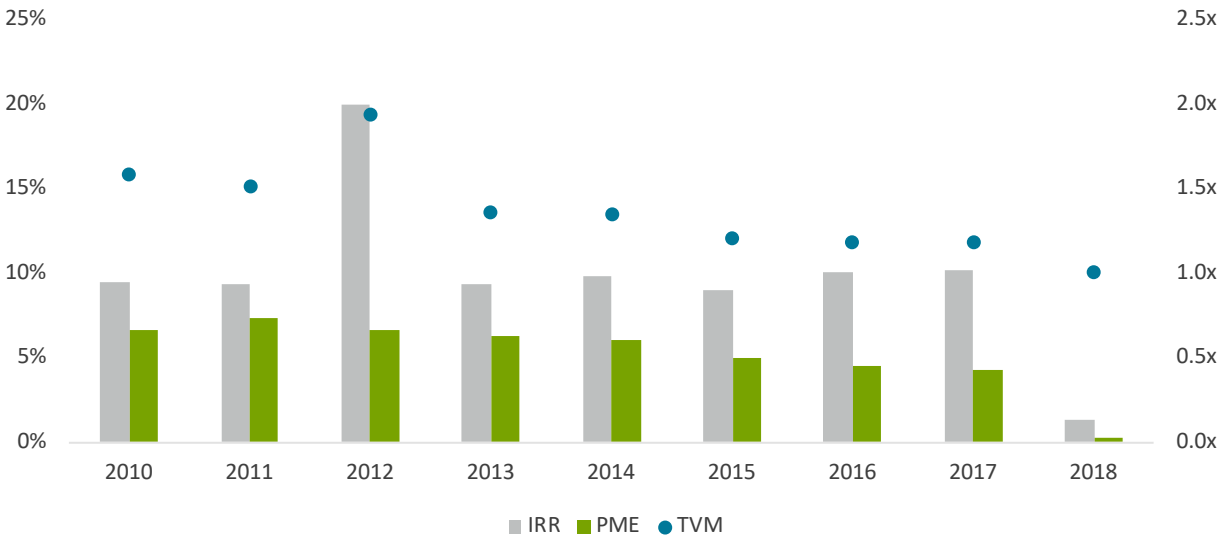
Performance by Vintage Year

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
2010	38.6	38.6	11.3	50.2	0.0	50.2	1.6x	0.3x	9.5%	6.6%	2.8%
2011	71.4	99.7	116.4	34.4	3.2	37.6	1.5x	1.2x	9.4%	7.4%	2.0%
2012	10.0	11.8	17.5	5.4	1.3	6.7	1.9x	1.5x	20.0%	6.6%	13.4%
2013	61.5	60.2	48.1	33.7	11.8	45.5	1.4x	0.8x	9.4%	6.3%	3.1%
2014	55.0	52.7	37.7	33.7	16.8	50.5	1.4x	0.7x	9.8%	6.0%	3.8%
2015	45.8	46.1	9.4	46.4	5.6	51.9	1.2x	0.2x	8.9%	4.9%	4.0%
2016	98.9	87.0	22.7	80.3	20.6	100.9	1.2x	0.3x	10.0%	4.5%	5.5%
2017	54.2	47.9	9.1	47.6	9.9	57.5	1.2x	0.2x	10.1%	4.2%	5.9%
2018	84.4	26.6	2.7	24.2	59.5	83.7	1.0x	0.1x	1.3%	0.3%	1.0%
2019	62.7	17.5	0.3	17.3	45.5	62.8	1.0x	0.0x	NM	NM	NM
2020	25.0	0.0	0.0	-0.1	25.0	24.9	-	-	NM	NM	NM
Total	607.5	488.2	275.4	373.2	199.0	572.2	1.3x	0.6x	9.7%	6.2%	3.5%

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.



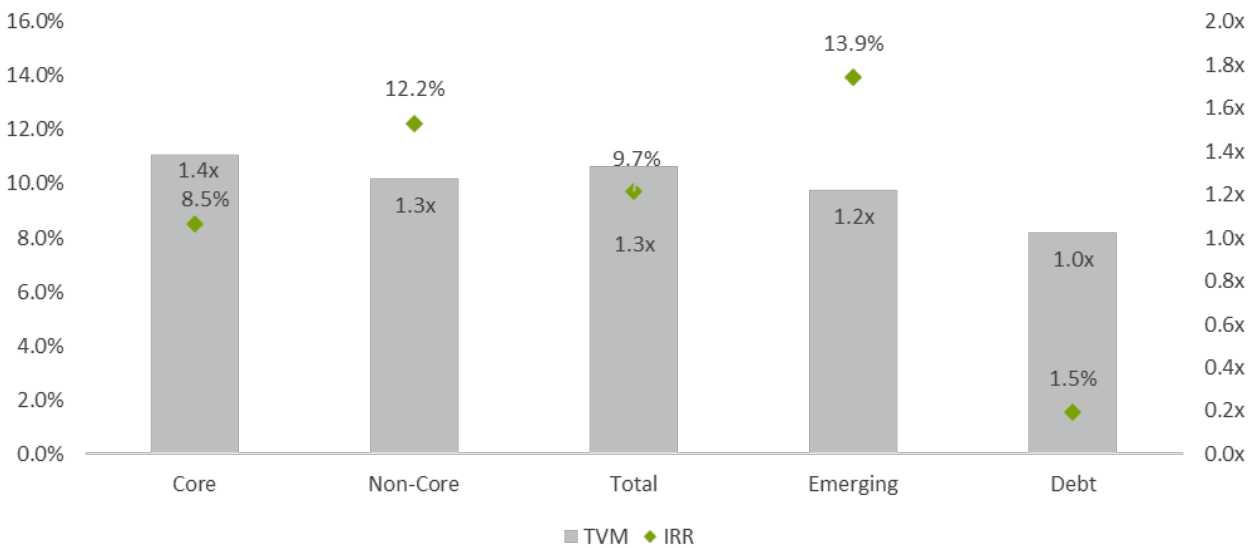
Performance by Strategy

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 Investments	Commitment	Contributions	Distributions	NAV	Unfunded	Exposure	TVM	IRR	PME		
										PME	Spread	Leverage
Core	17	259	238	103	226	54	280	1.4x	8.5%	6.5%	2.1%	30%
Non-Core	27	348	250	172	147	145	292	1.3x	12.2%	5.8%	6.5%	63%
Total	44	607	488	275	373	199	572	1.3x	9.7%	6.2%	3.5%	51%
Emerging	1	11	13	5	10	1	11	1.2x	13.9%	N/A	N/A	N/A
Debt	6	87	59	23	38	31	68	1.0x	1.5%	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	226.1	61%	53.9	27%	280.0	49%
Non-Core	147.1	39%	145.1	73%	292.2	51%
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Europe	46.1	12%	24.6	12%	70.7	12%
Asia	7.0	2%	3.7	2%	10.7	2%
Rest of World	0.6	0%	0.3	0%	0.9	0%
Total	373.2	100%	199.0	100%	572.2	100%

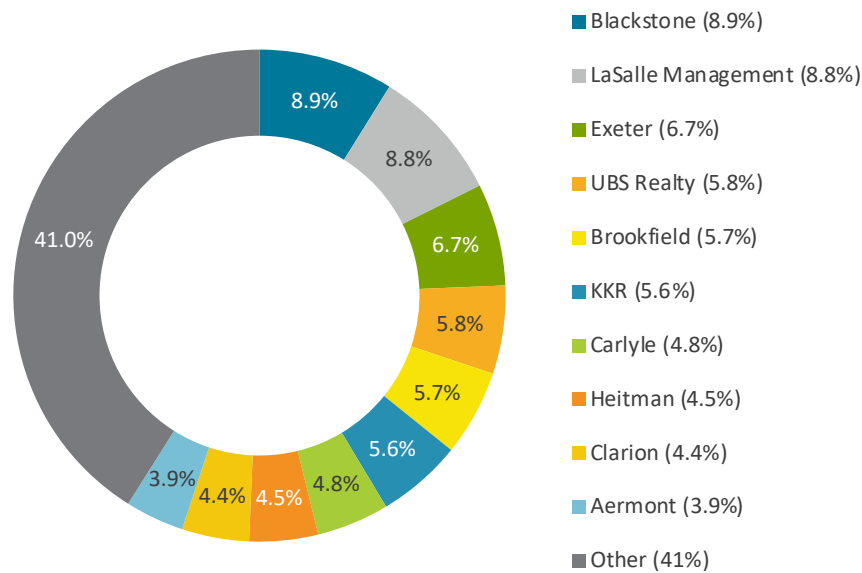
Top 10 – Manager Holdings

As of the first quarter of 2020, the Portfolio is well diversified by manager, with 28 active managers and US\$572.2 million total exposure.

(in USD millions; Active investments only)

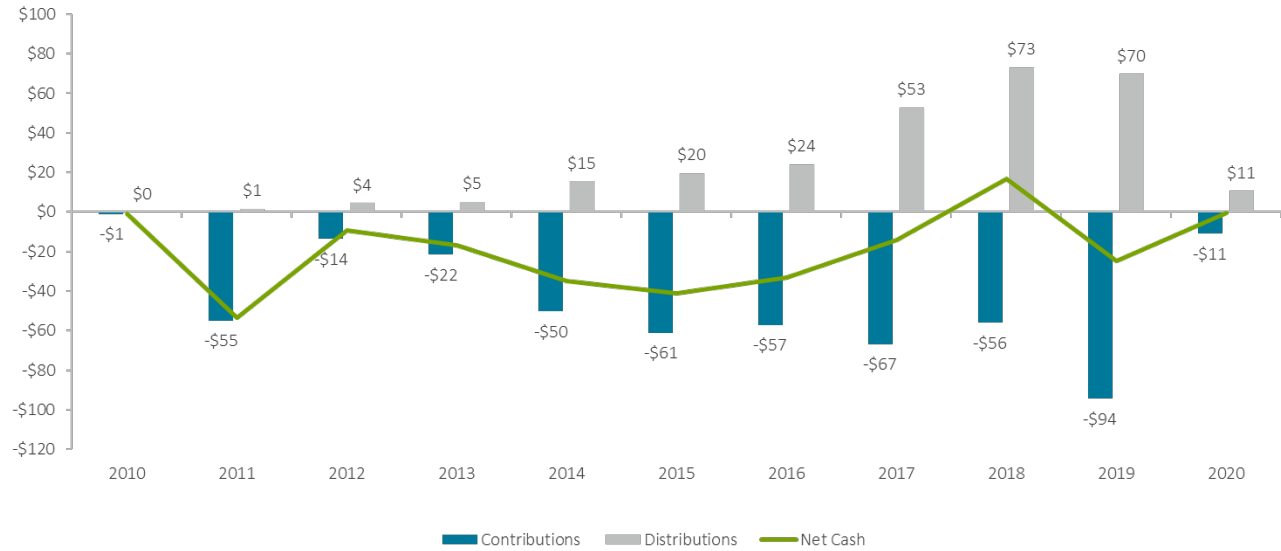
Manager	No. of		Potential Exposure							
	Active Inv	Commitment	Contributions	Distributions	NAV	Exposure	% of Portfolio	IRR	TVM	DPI
Blackstone	3	64.0	52.4	43.8	29.1	50.7	8.9%	13.6%	1.39x	0.84x
LaSalle Management	1	38.6	38.6	11.3	50.2	50.2	8.8%	9.5%	1.59x	0.29x
Exeter	4	37.7	19.6	1.5	20.3	38.4	6.7%	7.2%	1.12x	0.08x
UBS Realty	1	41.4	63.7	68.3	33.2	33.2	5.8%	7.9%	1.59x	1.07x
Brookfield	3	32.0	27.1	18.9	23.1	32.4	5.7%	16.6%	1.55x	0.70x
KKR	3	33.0	17.7	3.6	16.0	32.1	5.6%	7.3%	1.11x	0.21x
Carlyle	1	25.0	22.7	20.8	10.5	27.2	4.8%	13.5%	1.38x	0.92x
Heitman	1	25.0	10.8	0.8	10.8	25.8	4.5%	6.6%	1.08x	0.08x
Clarion	1	18.0	19.9	1.9	25.3	25.3	4.4%	15.1%	1.36x	0.10x
Aermont	2	21.2	9.3	3.1	10.2	22.1	3.9%	21.5%	1.44x	0.34x
Total - Top 10 Managers	20	335.8	281.9	174.3	228.6	337.3	59.0%	10.2%	1.43x	0.62x

Exposure by Manager



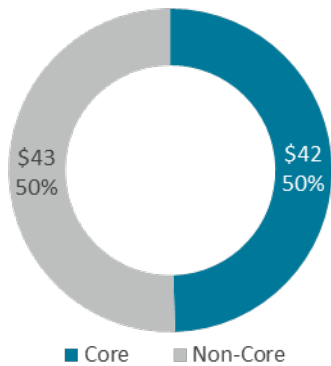
Portfolio Cash Flow Analysis

During 2020, the Portfolio contributed US\$11.0 million and received US\$10.6 million of distributions, for a net cash outflow of US\$0.5 million.

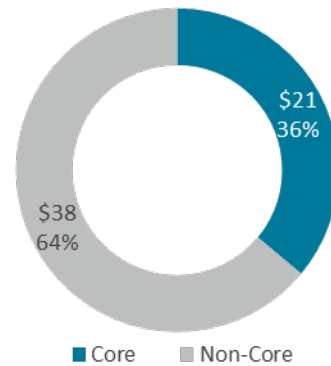


During the LTM period ended March 31, 2020, the Portfolio contributed US\$86 million and received US\$59 million of distributions, for a net cash outflow of US\$26 million.

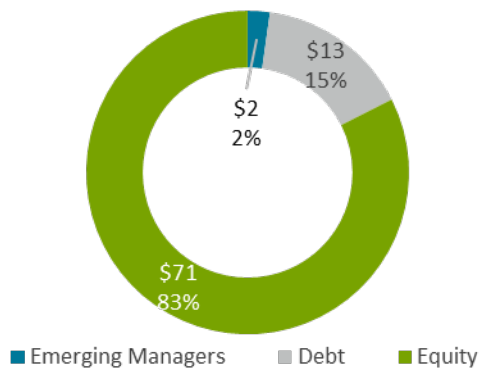
LTM Contributions by Core/Non-Core



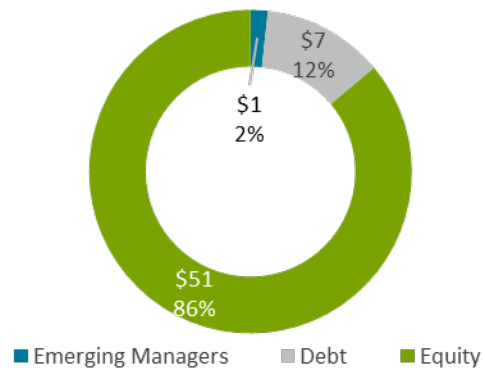
LTM Distributions by Core/Non-Core



LTM Contributions by Strategy

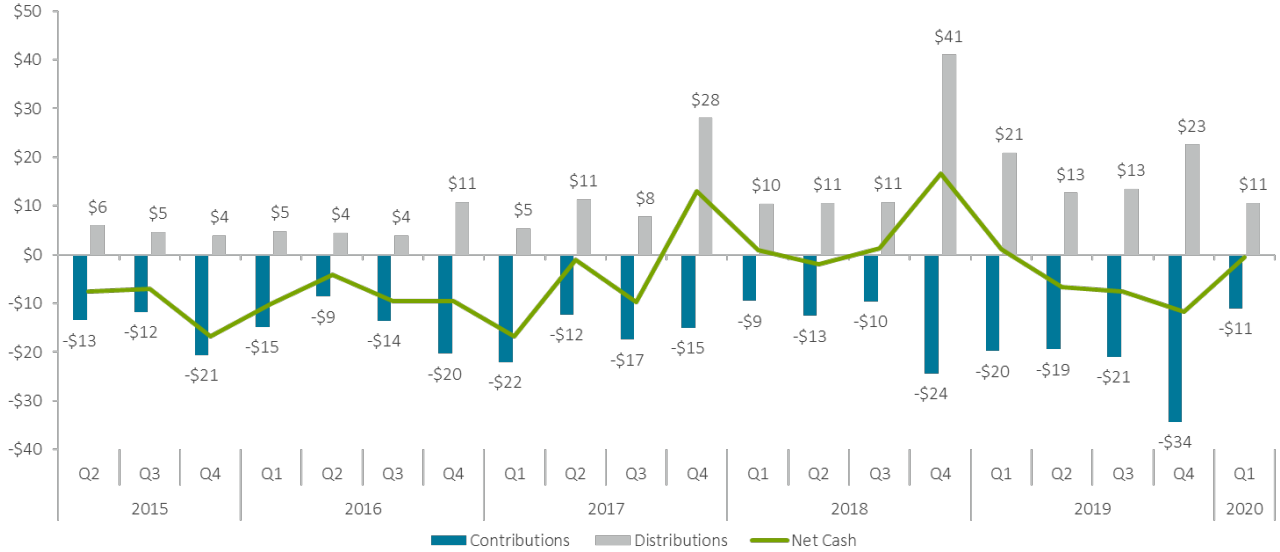


LTM Distributions by Strategy

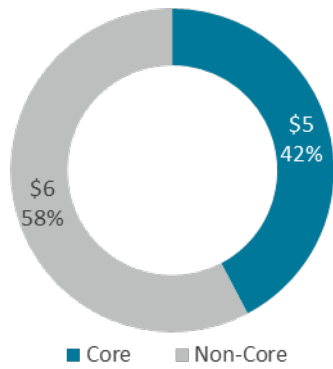


Quarterly Cash Flow Analysis

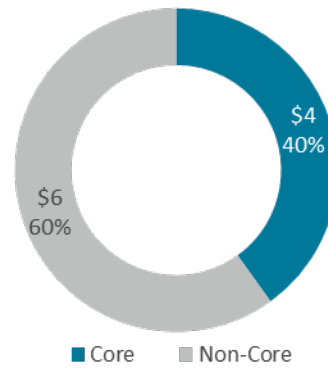
During the quarter, the Portfolio contributed US\$11.0 million and received US\$10.6 million of distributions, for a net cash outflow of US\$0.5 million.



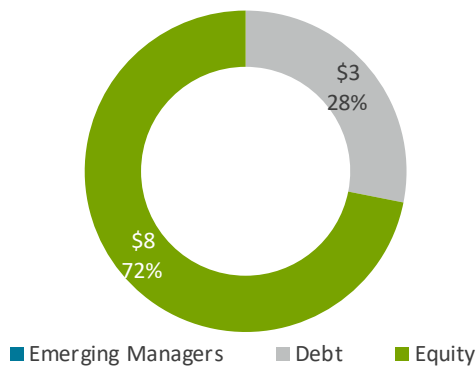
Quarterly Contributions by Core/Non-Core



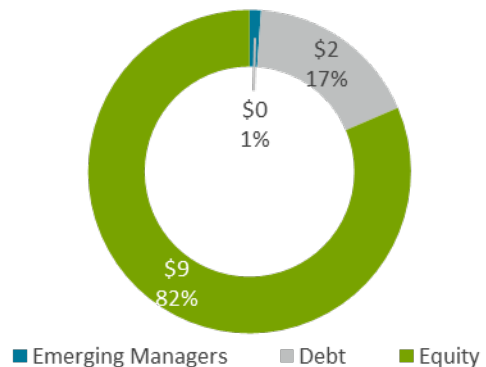
Quarterly Distributions by Core/Non-Core



Quarterly Contributions by Strategy

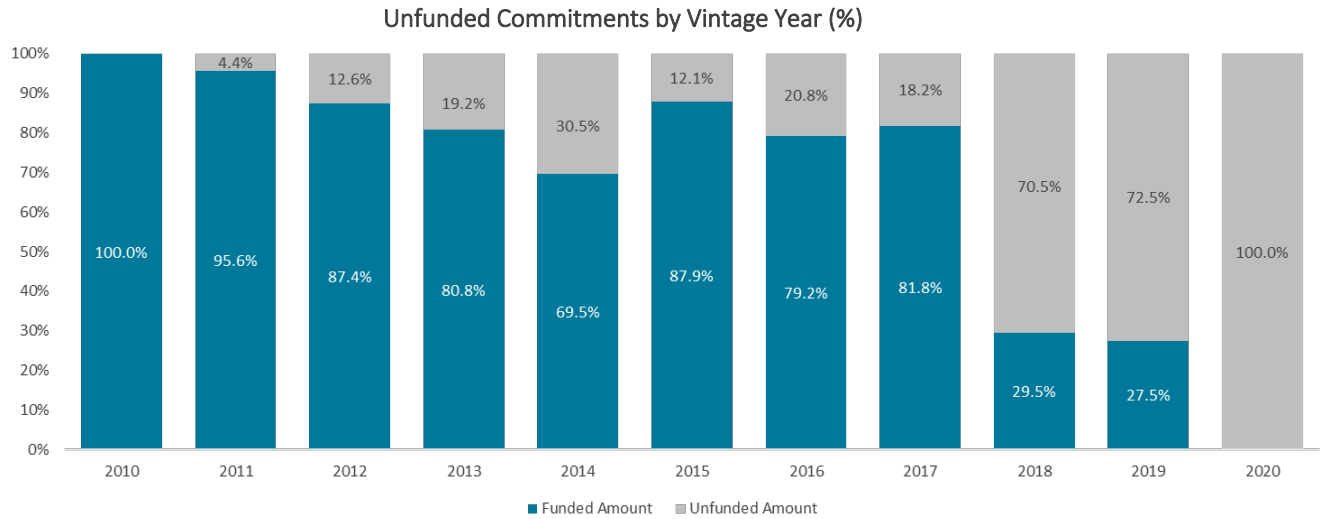


Quarterly Distributions by Strategy

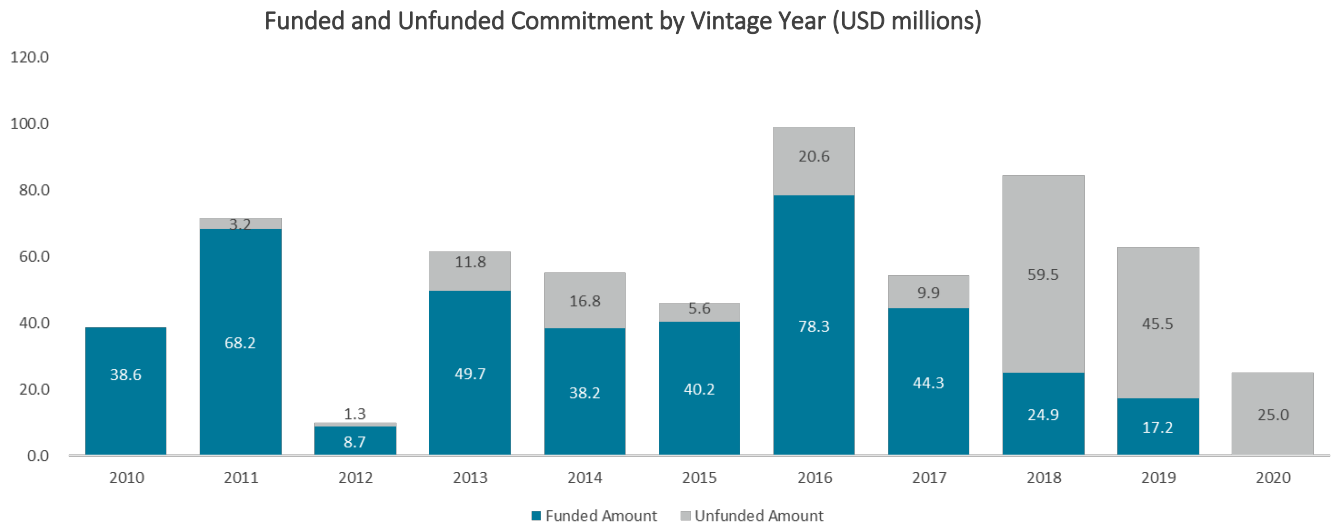


Vintage Year Analysis

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



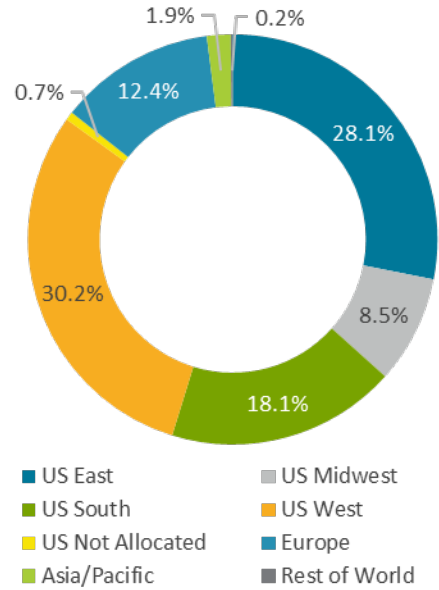
The following chart illustrates cumulative capital contributions relative to unfunded commitment, by fund vintage year, as of March 31, 2020.



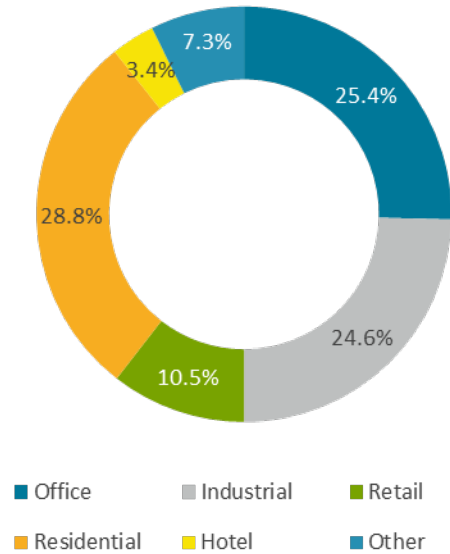
Portfolio Exposure Analysis

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	12.4%	9.4%
US East (Non-NY)	15.7%	21.9%
US East	28.1%	31.3%
US Midwest	8.5%	8.4%
US South	18.1%	18.8%
US West	30.2%	41.5%
US Not Allocated	0.7%	0.0%
United States	85.6%	100.0%
Europe	12.4%	0.0%
Asia/Pacific	1.9%	0.0%
Rest of World	0.2%	0.0%



Property Type	Exposure	
	NAV	NFI ODCE
Office	25.4%	34.1%
Industrial	24.6%	18.9%
Retail	10.5%	16.0%
Residential	28.8%	26.5%
Hotel	3.4%	0.0%
Other	7.3%	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 VIII	2018	12/21/2018	10.5	1.3	0.1	0.9	9.3	10.2	0.79x	0.06x	-39.9%
Almanac Realty Securities VIII (Sidecar II)	2018	12/21/2018	7.0	0.8	0.0	0.7	6.2	6.9	0.94x	0.04x	-11.7%
Artemis Co-Investment	2016	2/24/2016	11.0	12.6	5.0	10.5	1.0	11.4	1.22x	0.39x	13.9%
Artemis Income and Growth Fund	2018	10/18/2019	10.0	2.0	0.0	1.8	8.0	9.8	0.92x	0.00x	NM
Brookfield Premier Real Estate Partners	2016	11/22/2016	10.0	11.3	1.3	13.8	0.0	13.8	1.33x	0.12x	10.7%
Exeter Core Industrial Club Fund II	2016	5/20/2016	10.0	9.6	1.5	10.0	0.4	10.4	1.20x	0.16x	9.8%
Exeter Core Industrial Fund III	2019	2/19/2020	12.7	1.5	0.0	1.2	11.2	12.5	0.85x	0.00x	NM
Harrison Street Core Property Fund	2019	10/4/2019	10.0	10.2	0.2	10.3	0.0	10.3	1.03x	0.02x	NM
Harrison Street Core Property Fund Co-Investment	2019	5/13/2019	5.0	3.2	0.0	3.3	1.8	5.1	1.04x	0.01x	NM
Heitman Core Real Estate Debt Income Trust	2018	11/7/2018	25.0	10.8	0.8	10.8	15.0	25.8	1.08x	0.08x	6.6%
Jamestown Premier Property Fund	2016	2/4/2016	6.2	6.6	2.7	5.2	0.6	5.9	1.19x	0.40x	7.3%
LaSalle Property Fund	2010	12/13/2010	38.6	38.6	11.3	50.2	0.0	50.2	1.59x	0.29x	9.5%
Lion Industrial Trust	2017	1/3/2017	18.0	19.9	1.9	25.3	0.0	25.3	1.36x	0.10x	15.1%
MetLife Core Property Fund	2014	7/1/2014	15.0	15.0	3.7	19.3	0.0	19.3	1.53x	0.24x	9.1%
NYC Asset Investor #2	2013	7/9/2013	11.0	11.2	4.7	8.1	0.4	8.5	1.15x	0.42x	3.6%
UBS Trumbull Property Fund	2011	4/1/2011	41.4	63.7	68.3	33.2	0.0	33.2	1.59x	1.07x	7.9%
USAA Eagle Real Estate Fund	2015	12/1/2015	18.0	19.3	1.3	21.4	0.0	21.4	1.17x	0.07x	7.0%
Total: Core Investments			259.4	237.7	102.9	226.1	53.9	280.0	1.38x	0.43x	8.5%

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	\$9.9	\$1.7	\$0.0	\$0.6	\$8.2	\$8.8	0.35x	0.00x	NM
Blackstone Real Estate Partners Europe IV L.P. - USD	2013	12/23/2013	\$32.5	\$32.3	\$36.9	\$11.2	\$5.9	\$17.1	1.49x	1.14x	14.0%
Blackstone Real Estate Partners IX L.P.	2019	9/23/2019	\$15.0	\$2.7	\$0.1	\$2.5	\$12.4	\$14.9	0.96x	0.03x	NM
Blackstone Real Estate Partners VIII L.P.	2015	8/18/2015	\$16.5	\$17.4	\$6.8	\$15.4	\$3.3	\$18.6	1.28x	0.39x	12.6%
Brookfield Strategic Real Estate Partners	2012	9/20/2012	\$10.0	\$11.8	\$17.5	\$5.4	\$1.3	\$6.7	1.94x	1.48x	20.0%
Brookfield Strategic Real Estate Partners III, L.P.	2018	4/12/2019	\$12.0	\$3.9	\$0.0	\$3.8	\$8.1	\$11.9	0.99x	0.01x	NM
Carlyle Realty Partners VII, L.P.	2014	7/1/2014	\$25.0	\$22.7	\$20.8	\$10.5	\$16.8	\$27.2	1.38x	0.92x	13.5%
DivcoWest Fund V	2016	12/21/2016	\$10.0	\$6.7	\$0.2	\$7.2	\$3.3	\$10.5	1.11x	0.03x	5.8%
DivcoWest Fund VI	2019	N/A	\$10.0	\$0.0	\$0.0	-\$0.1	\$10.0	\$9.9	-	-	-
DRA Growth and Income Fund IX	2016	3/9/2017	\$10.0	\$10.1	\$2.8	\$9.0	\$1.3	\$10.3	1.17x	0.28x	13.1%
Exeter Industrial Value Fund IV, L.P.	2017	6/30/2017	\$10.0	\$8.5	\$0.0	\$9.1	\$1.5	\$10.6	1.07x	0.00x	4.6%
Exeter Industrial Value Fund V, L.P.	2019	N/A	\$5.0	\$0.0	\$0.0	\$0.0	\$5.0	\$5.0	-	-	-
Franklin Templeton Private Real Estate Fund	2012	3/31/2011	\$30.0	\$35.9	\$48.1	\$1.3	\$3.2	\$4.4	1.37x	1.34x	19.5%
GreenOak Asia III	2019	N/A	\$10.0	\$0.0	\$0.0	-\$0.1	\$10.0	\$9.9	-	-	-
H2 Special Opportunities III	2014	12/29/2014	\$15.0	\$15.0	\$13.2	\$4.0	\$0.0	\$4.0	1.15x	0.88x	5.7%
H2 Special Opportunities IV	2016	11/15/2016	\$10.0	\$6.5	\$0.1	\$3.8	\$3.6	\$7.4	0.60x	0.01x	-63.0%
KKR Real Estate Partners Americas II	2017	2/9/2018	\$10.0	\$6.1	\$1.8	\$5.4	\$4.7	\$10.2	1.19x	0.29x	18.8%
KKR Real Estate Partners Europe II	2019	N/A	\$10.0	\$0.0	\$0.0	\$0.0	\$10.0	\$10.0	-	-	-
Lone Star Real Estate Fund V, L.P.	2016	9/26/2017	\$13.2	\$6.2	\$2.4	\$2.8	\$7.2	\$9.9	0.84x	0.39x	-17.8%
NYC Asset Investor #1	2013	6/25/2013	\$10.0	\$11.4	\$5.5	\$8.0	\$2.9	\$10.8	1.18x	0.48x	4.2%
NYC Asset Investor #3	2013	9/20/2013	\$8.0	\$5.3	\$0.9	\$6.4	\$2.7	\$9.1	1.38x	0.18x	9.3%
NYCRS-KKR CMBS Retention Partners	2017	6/30/2017	\$13.0	\$11.6	\$1.9	\$10.5	\$1.4	\$12.0	1.07x	0.16x	3.9%
Pramerica Real Estate Capital VI	2016	4/20/2017	\$10.4	\$8.9	\$4.5	\$5.6	\$3.5	\$9.1	1.13x	0.50x	12.2%
PW Real Estate Fund III	2015	10/7/2016	\$11.2	\$7.6	\$3.1	\$9.6	\$3.7	\$13.3	1.68x	0.41x	27.5%
Tristan European Property Investors Special Opp IV	2015	12/18/2015	\$11.3	\$9.4	\$1.2	\$9.6	\$2.3	\$11.9	1.15x	0.13x	6.7%
Westbrook Real Estate Fund X	2015	7/18/2016	\$10.0	\$8.6	\$4.4	\$5.6	\$3.0	\$8.6	1.15x	0.51x	11.0%
Westbrook Real Estate Fund XI	2018	N/A	\$10.0	\$0.0	\$0.0	\$0.0	\$10.0	\$10.0	-	-	-
Total: Non-Core Investments			348.0	250.5	172.4	147.1	145.1	292.2	1.28x	0.69x	12.2%
Total: All Investments			607.5	488.2	275.4	373.2	199.0	572.2	1.33x	0.56x	9.7%

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:

New York City Board of Education Retirement System



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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

New York City Board of Education Retirement System (“NYC BERS”) 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 BERS 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 BERS 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\$250.4 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 BERS has an Infrastructure allocation target of 4% of total pension assets. As of March 31, 2020, the market value of NYC BERS Infrastructure Program represented approximately 2.4% of total pension assets, a 36-basis point increase from the prior quarter.

As the Program matures, the percentage of its market value relative to the total NYC BERS 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*	\$6,141.0	\$6,861.0	\$6,245.0	(\$720.0)	(\$104.0)
Total Infrastructure Assets	\$146.3	\$138.9	\$112.7	\$7.4	\$33.5
% Allocation to Infrastructure (Target of 4%)	2.4%	2.0%	1.8%	+36 bps	+58 bps

*NYC BERS 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 10.7%. 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	\$250.4	\$250.6	\$228.0	(\$0.3)	\$22.3
Contributed Capital	\$150.3	\$134.7	\$109.5	\$15.6	\$40.8
Distributed Capital	\$36.2	\$32.0	\$22.5	\$4.2	\$13.7
Market Value	\$146.3	\$138.9	\$112.7	\$7.4	\$33.5
Total Value	\$182.5	\$170.9	\$135.2	\$11.6	\$47.2
Total Gain/(Loss)	\$32.1	\$36.2	\$25.7	(\$4.0)	\$6.4
Unfunded Commitment	\$113.9	\$128.4	\$129.5	(\$14.5)	(\$15.6)
Exposure ²	\$260.2	\$267.3	\$242.3	(\$7.1)	\$17.9
DPI ³	0.2x	0.2x	0.2x	0.0x	0.0x
TVPI ⁴	1.2x	1.3x	1.2x	-0.1x	0.0x
IRR ⁵	10.7%	13.2%	13.6%	-2.4%	-2.9%
TVPI Net of StepStone Fees ⁶	1.2x	1.3x	1.2x	-0.1x	0.0x
IRR Net of StepStone Fees ⁶	10.7%	13.3%	13.5%	-2.6%	-2.8%

* 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.

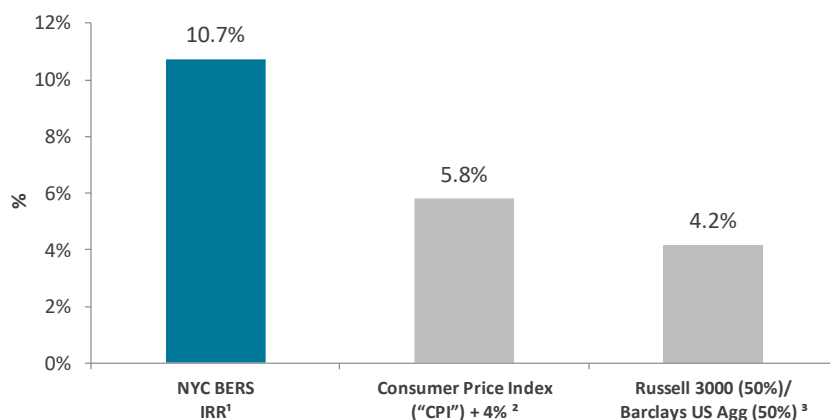
⁵ IRR, or Internal Rate of Return, is a performance metric that is calculated based on the Portfolio's daily cash flows and market value as of quarter-end. IRR is net of fund managers' fees, expenses and carried interest.

⁶ TVPI and IRR Net of StepStone fees represent TVPI and IRR net of fees paid by NYC BERS 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 BERS’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. The returns are broken out by primary infrastructure funds and co-investment funds.



¹NYC BERS 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.

³Benchmark 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.

	Market Value		Unfunded Commitment		Exposure	
	\$	% of Total	\$	% of Total	\$	% of Total
<i>As of March 31, 2020. (US\$ In millions)</i>						
By Strategy:						
Core	127.5	87.2%	108.2	95.0%	235.7	90.6%
Non-Core	18.8	12.8%	5.7	5.0%	24.5	9.4%
Total	146.3	100.0%	113.9	100.0%	260.2	100.0%
By Geographic Focus:						
Global	34.6	23.6%	12.0	10.6%	46.6	17.9%
North America	17.0	11.6%	11.8	10.4%	28.8	11.1%
OECD	94.7	64.7%	90.0	79.0%	184.7	71.0%
Total	146.3	100.0%	113.9	100.0%	260.2	100.0%
By Industry Focus:						
Communication	1.6	1.1%	-	0.0%	1.6	0.6%
Diversified	119.7	81.8%	84.2	73.9%	203.9	78.4%
Energy	22.9	15.7%	29.7	26.1%	52.6	20.2%
Transportation	2.1	1.4%	-	0.0%	2.1	0.8%
Total	146.3	100.0%	113.9	100.0%	260.2	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 did not close on any new investments.
- **Cash Outflow Increased** – During the first quarter of 2020, the Program made US\$15.6 million of contributions and received US\$4.2 million of distributions, for a net cash outflow of US\$11.4 million. This compared to a net cash outflow of US\$5.5 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\$4.0 million, or 2.7%, from the prior quarter. The valuation decrease primarily reflects the decrease in value of underlying investments in Global Energy & Power Infrastructure Fund 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	1.5	1.4	1.0x
Axiom Wind II L.P.	Axiom Infrastructure Canada II (Int'l) Limited Partnership	Jan-20	Private	Renewables	Canada	0.9	1.0	1.2x
Toehold and Other Investments (Brookfield Infra IV)	Brookfield Infrastructure Fund IV, L.P.	Feb-20	Private	Other	United States	0.3	0.3	1.0x
MRP West Power Holdings II, LLC	NYCRS EIG Energy Partners, L.P.	Jan-20	Private	Conventional Power	United States	0.2	0.2	1.0x
MRP CalPeak Holdings, LLC	NYCRS EIG Energy Partners, L.P.	Jan-20	Private	Conventional Power	United States	0.2	0.2	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	\$10.0	\$8.4	\$3.4	\$9.6	\$13.1	\$4.7	\$2.3	\$11.9	0.4x	1.6x	11.5%
2014	49.0	54.9	24.2	54.4	78.6	23.7	2.2	56.5	0.4x	1.4x	14.1%
2016	32.6	23.0	3.6	21.9	25.5	2.5	11.7	33.5	0.2x	1.1x	5.7%
2017	45.2	30.4	3.8	30.1	33.9	3.5	17.1	47.2	0.1x	1.1x	8.8%
2018	36.0	11.1	0.5	9.7	10.2	-	25.0	34.8	NM	NM	NM
2019	77.5	22.6	0.6	20.6	21.2	-	55.6	76.3	NM	NM	NM
Total	\$250.4	\$150.3	\$36.2	\$146.3	\$182.5	\$32.1	\$113.9	\$260.2	0.2x	1.2x	10.7%

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	\$228.9	\$132.2	\$33.7	\$127.5	\$161.2	\$29.0	\$108.2	\$235.7	0.3x	1.2x	10.6%
Diversified	181.6	108.3	21.6	110.1	131.6	23.3	83.1	193.1	0.2x	1.2x	9.5%
Energy	45.3	21.9	12.2	15.3	27.5	5.6	25.1	40.5	0.6x	1.3x	21.2%
Transportation	2.0	2.0	-	2.1	2.1	0.1	-	2.1	NM	1.0x	9.8%
Non-Core	\$21.5	\$18.1	\$2.4	\$18.8	\$21.2	\$3.1	\$5.7	\$24.5	0.1x	1.2x	12.1%
Communication	1.6	1.6	-	1.6	1.6	-	-	1.6	NM	NM	NM
Diversified	9.3	9.4	1.4	9.6	11.0	1.6	1.1	10.7	0.2x	1.1x	11.3%
Energy	10.6	7.0	1.0	7.6	8.6	1.6	4.6	12.2	0.1x	1.2x	13.2%
Total	\$250.4	\$150.3	\$36.2	\$146.3	\$182.5	\$32.1	\$113.9	\$260.2	0.2x	1.2x	10.7%

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	\$41.9	\$32.9	\$7.2	\$34.6	\$41.7	\$8.9	\$12.0	\$46.6	0.2x	1.3x	11.3%
North America	28.8	17.6	2.1	17.0	19.1	1.5	11.8	28.8	0.1x	1.1x	6.3%
OECD	179.7	99.8	27.0	94.7	121.6	21.8	90.0	184.7	0.3x	1.2x	11.0%
Total	\$250.4	\$150.3	\$36.2	\$146.3	\$182.5	\$32.1	\$113.9	\$260.2	0.2x	1.2x	10.7%

*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:

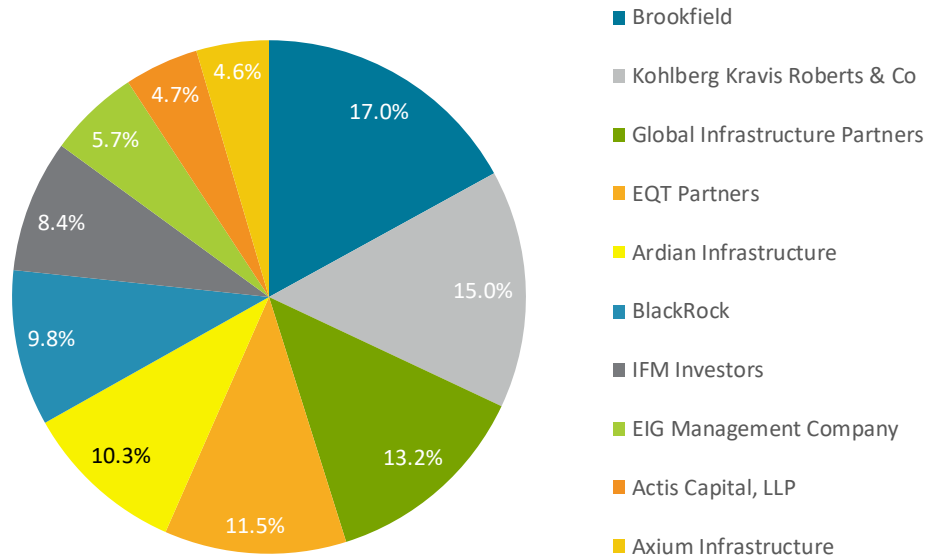
- Core Infrastructure Investments: 60% to 100%; and
- Non-Core Infrastructure Investments: 0% to 40%.

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	127.5	87.2%	108.2	95.0%	235.7	90.6%
Non-Core	18.8	12.8%	5.7	5.0%	24.5	9.4%
Total	146.3	100.0%	113.9	100.0%	260.2	100.0%
By Geographic Focus:						
Global	34.6	23.6%	12.0	10.6%	46.6	17.9%
North America	17.0	11.6%	11.8	10.4%	28.8	11.1%
OECD	94.7	64.7%	90.0	79.0%	184.7	71.0%
Total	146.3	100.0%	113.9	100.0%	260.2	100.0%
By Industry Focus:						
Communication	1.6	1.1%	-	0.0%	1.6	0.6%
Diversified	119.7	81.8%	84.2	73.9%	203.9	78.4%
Energy	22.9	15.7%	29.7	26.1%	52.6	20.2%
Transportation	2.1	1.4%	-	0.0%	2.1	0.8%
Total	146.3	100.0%	113.9	100.0%	260.2	100.0%

By Investment Manager

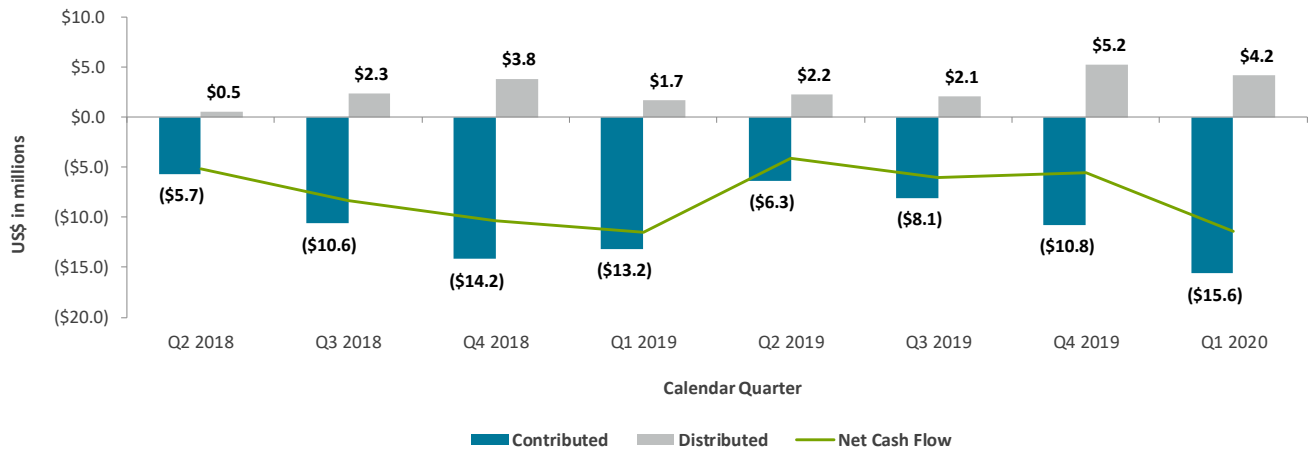
As of March 31, 2020, the Program had made 21 investment commitments to ten managers. NYC BERS seeks to limit its exposure to any single manager to no more than 20% of the total Real Assets Program when fully invested. As the Program matures and closes on additional commitments, the single manager exposure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



Portfolio Cash Flow Analysis

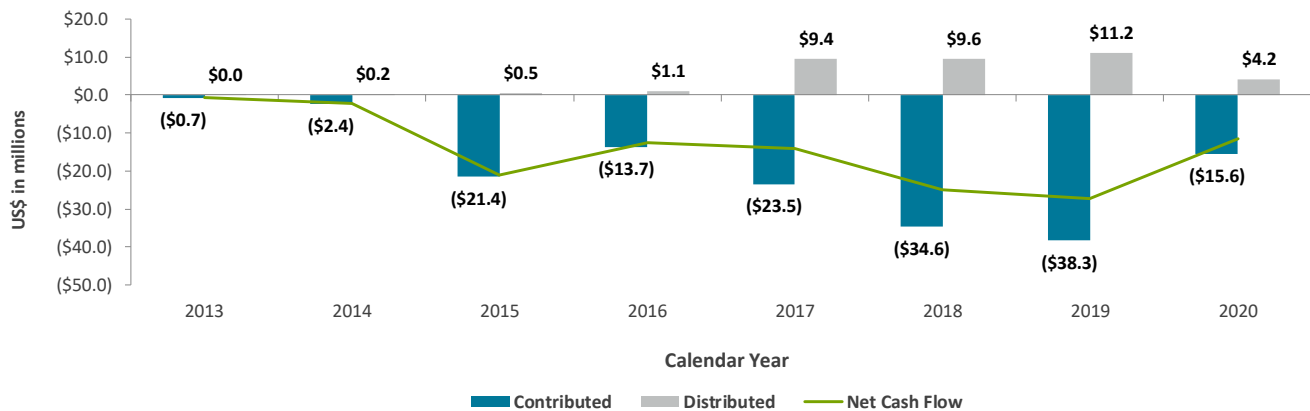
Quarterly Cash Flow Activity

During the first quarter of 2020, the Program made US\$15.6 million of contributions and received US\$4.2 million of distributions, for a net cash outflow of US\$11.4 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

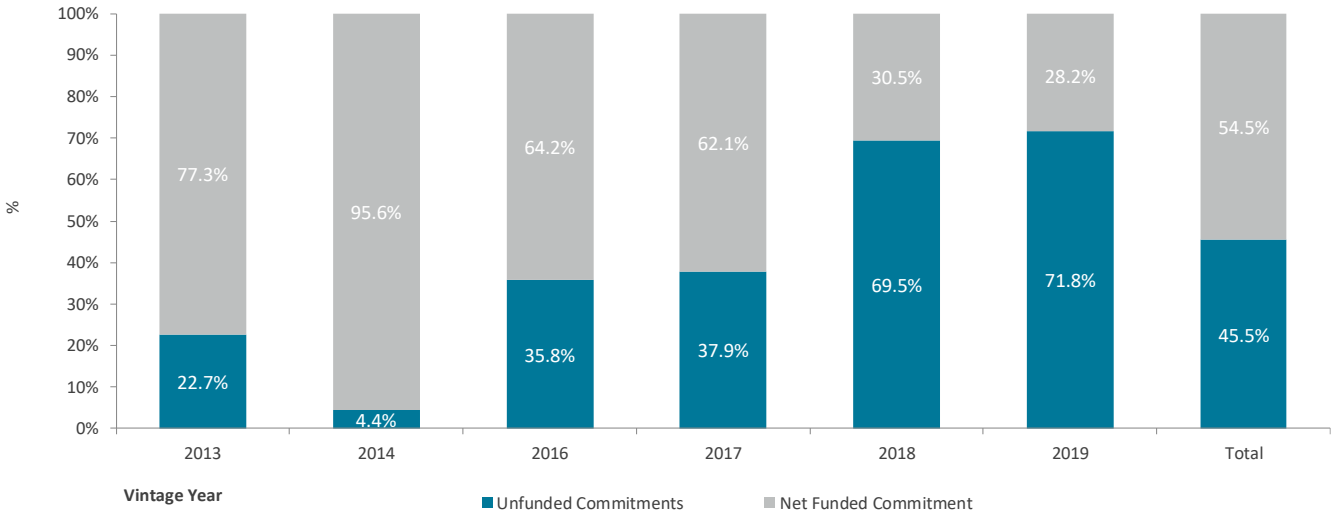
During the first quarter of 2020, the Program made US\$15.6 million of contributions and received US\$4.2 million of distributions, for a net cash outflow of US\$11.4 million. The graph below illustrates cash flow activity since inception by calendar year.



Net Funded and Unfunded Commitments by Vintage Year

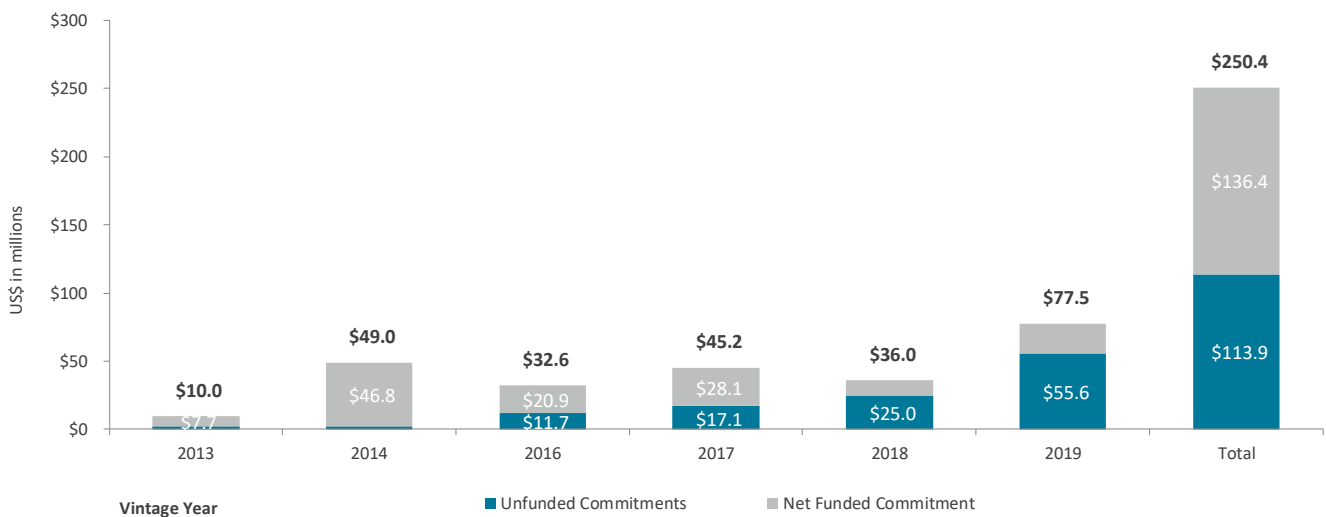
The following chart illustrates the Portfolio’s net funded commitments (defined as total contributions inside commitment less any returns of excess capital and recallable distributions) as a percentage of total capital commitments, by fund vintage year, as of March 31, 2020. Overall, the Portfolio was 45.5% unfunded as of quarter-end.

Net Funded and Unfunded Commitment by Vintage Year (%)



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\$113.9 million of unfunded commitments as of quarter-end.

Net Funded and Unfunded Commitment by Vintage Year (US\$ millions)

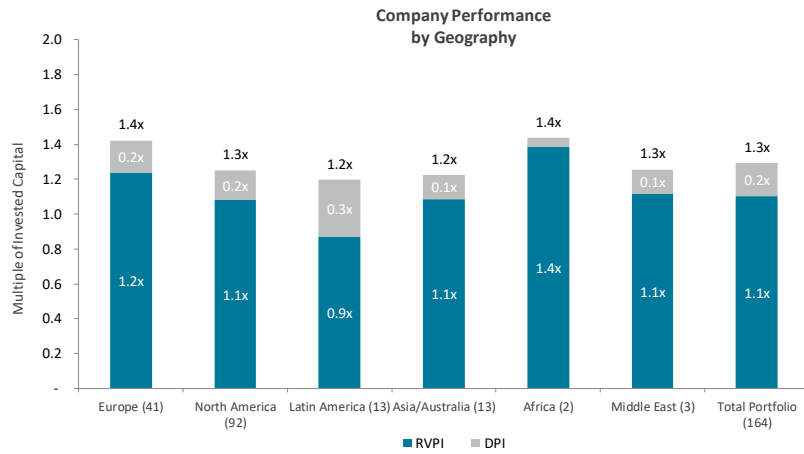
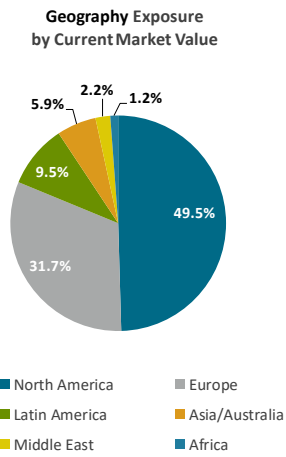


Portfolio Company-Level Analysis

As of quarter-end, the Portfolio had exposure to 164 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.

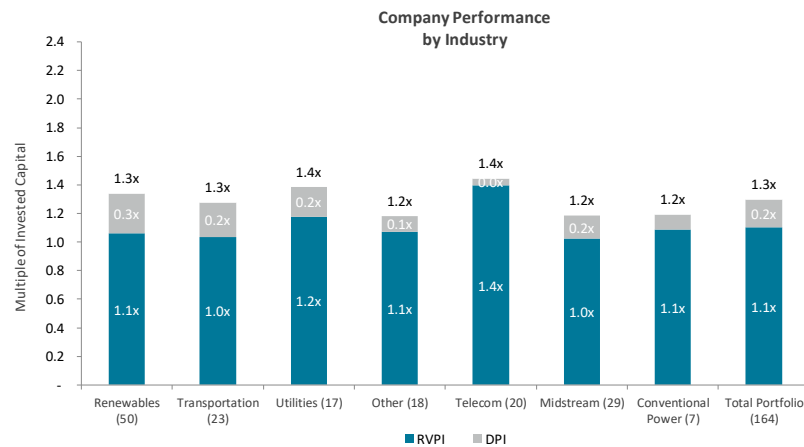
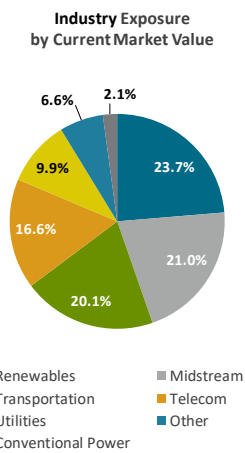
Geographic Exposure and Performance

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.

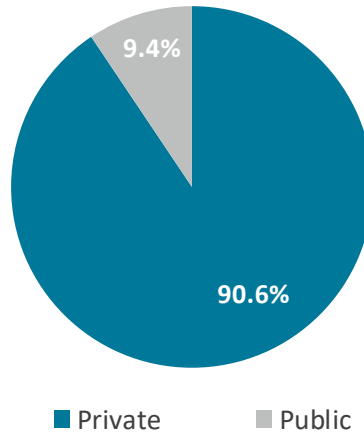


*Multiples may not add to total multiple due to rounding

Public Market Exposure

As of quarter-end, publicly traded investments comprised 9.4% 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 BERS has an Infrastructure allocation target of 4% of total pension assets.	✓	The market value of NYC BERS Infrastructure Program represents approximately 2.4% 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 4.9% and 6.6%, 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 90.6% exposure to Core investments and 9.4% 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 41.2% 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):

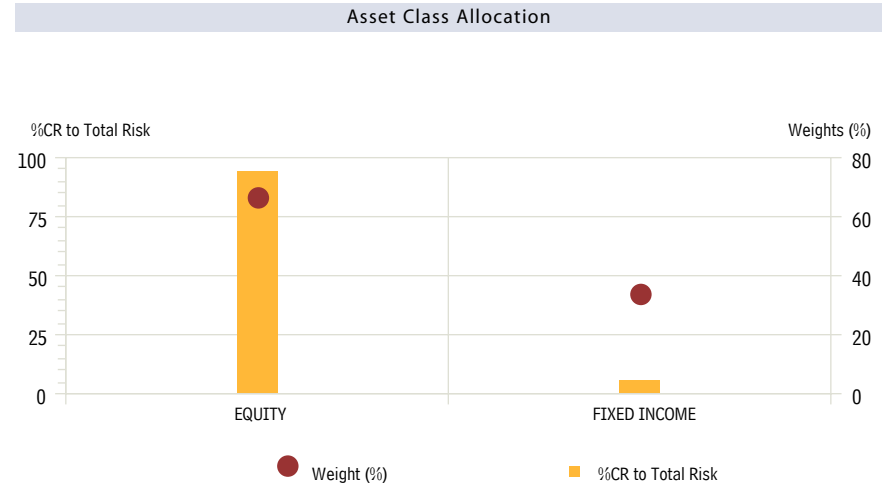
BarraOne Total Plan Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: BERS_Total Plan
 BENCHMARK: BERS_Policy
 POSITIONS: 6,401

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 6,815,722,435
 ACCEPTED: 6,316

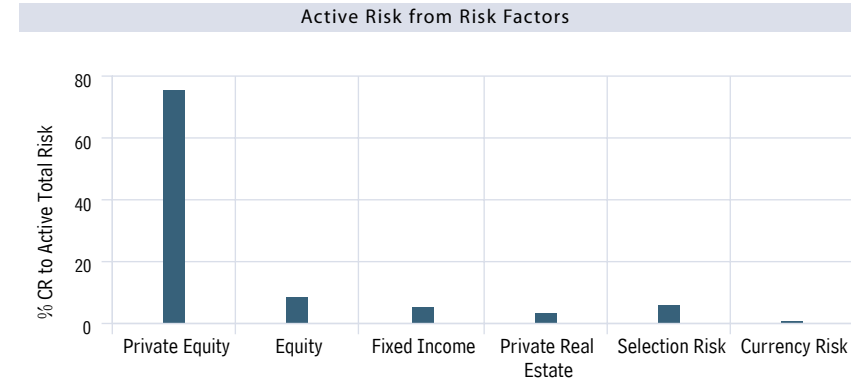
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	15.72	Total	6,815,722,435	100.00	15.72	15.72	100.00
Benchmark Risk	15.59	EQUITY	4,540,231,176	66.61	22.41	14.86	94.51
Active Risk	1.76	FIXED INCOME	2,275,491,259	33.39	5.03	0.86	5.49
Portfolio Beta	1.00						
Effective Duration	2.18						



Risk Factor Breakdown

Risk Source	Risk Decomposition			Risk Decomposition		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	15.72	100.00	1.00	1.76	100.00	1.00
Local Market Risk	15.30	97.28	1.00	1.74	99.11	1.00
Common Factor Risk	15.25	97.01	1.00	1.63	92.80	0.96
Equity	13.49	85.80	0.98	0.15	8.72	0.30
Fixed Income	0.93	5.92	0.52	0.09	4.92	0.23
Private Real Estate	0.68	4.35	0.75	0.06	3.50	0.17
Private Equity	0.15	0.95	0.10	1.33	75.65	0.87
Selection Risk	0.04	0.26	0.05	0.11	6.31	0.25
Currency Risk	0.43	2.72	0.44	0.02	0.89	0.11



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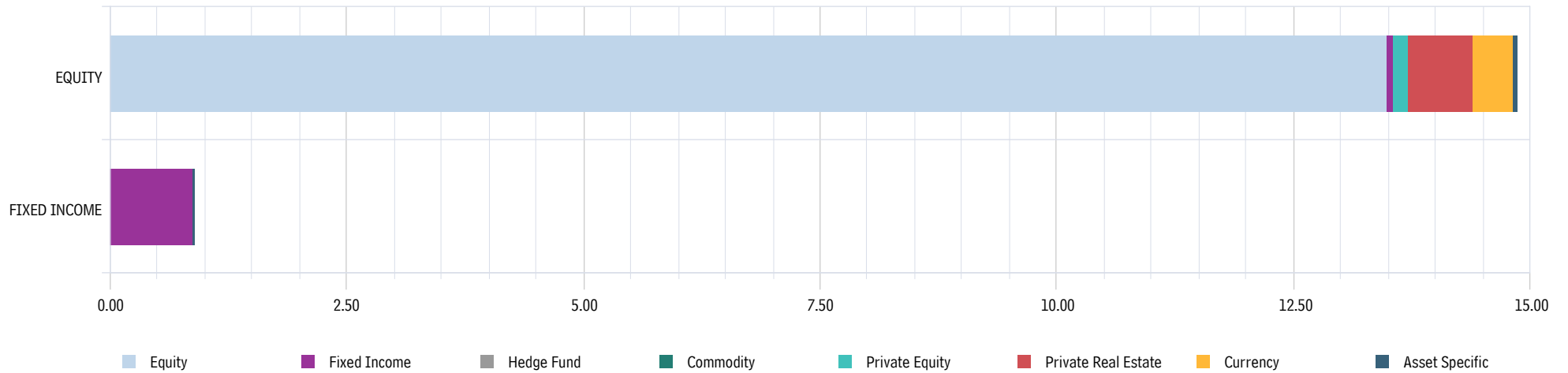
BarraOne Total Plan Summary

COMPANY: NYCRC - BERS
PORTFOLIO: BERS_Total Plan
BENCHMARK: BERS_Policy
POSITIONS: 6,401

CURRENCY: USD
ANALYSIS DATE: June 30, 2020
MARKET VALUE: 6,815,722,435
ACCEPTED: 6,316

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	6,815,722,435	100.00	100.00	15.72	100.00	15.72	13.49	0.93	0.00	0.00	0.00	0.68	0.15	0.43	0.04
EQUITY	4,540,231,176	66.61	66.61	22.41	94.51	14.86	13.49	0.07	0.00	0.00	0.00	0.68	0.15	0.43	0.04
FIXED INCOME	2,275,491,259	33.39	33.39	5.03	5.49	0.86	0.00	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00



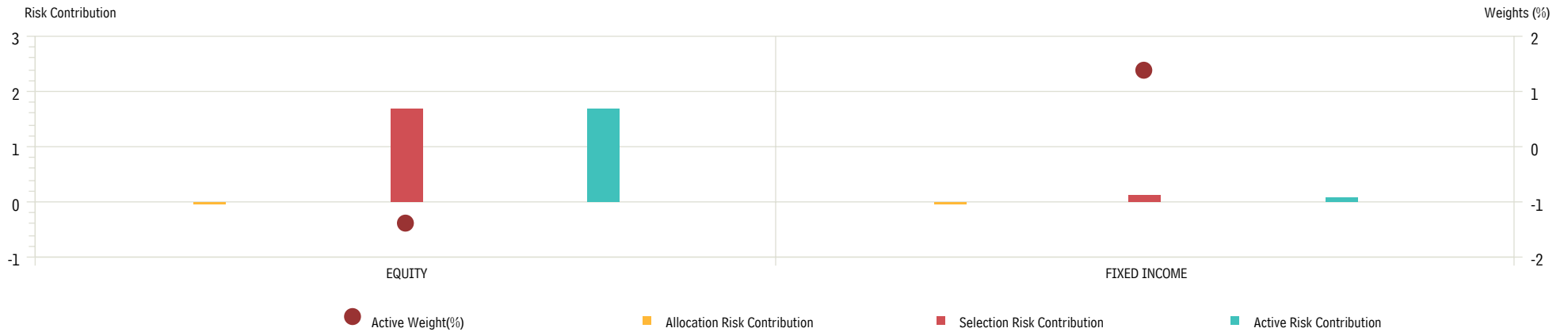
BarraOne Total Plan Summary

COMPANY: NYCRC - BERS
 PORTFOLIO: BERS_Total Plan
 BENCHMARK: BERS_Policy
 POSITIONS: 6,401

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 6,815,722,435
 ACCEPTED: 6,316

Allocation Selection

Asset Class	Active Weight(%)	Allocation			Selection			Active	
		Volatility	Correlation	Risk Contribution	Volatility	Correlation	Risk Contribution	Risk Contribution	Risk Contribution
Active Total Risk				-0.02				1.78	1.76
EQUITY	-1.39	6.68	0.07	-0.01	2.59	0.97	1.68	1.68	1.68
FIXED INCOME	1.39	14.20	-0.07	-0.01	1.32	0.22	0.10	0.10	0.08



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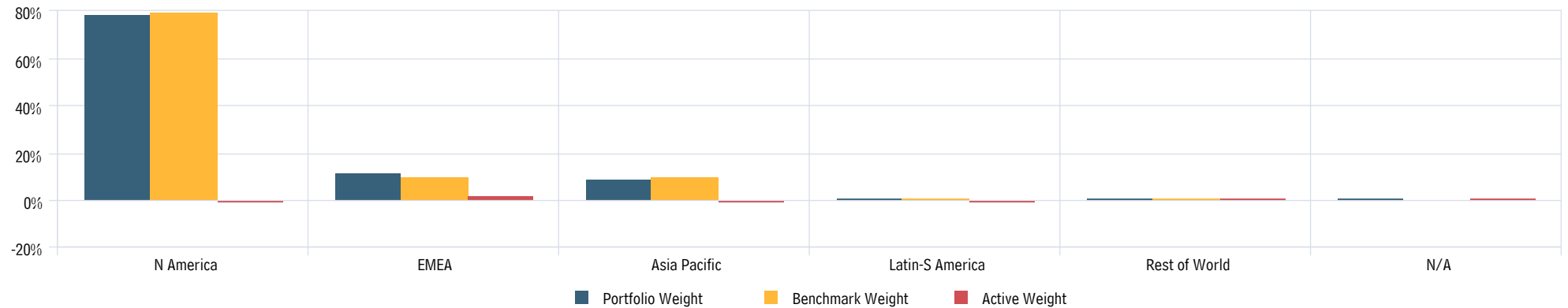
BarraOne Total Plan Summary

COMPANY: NYCRC - BERS
 PORTFOLIO: BERS_Total Plan
 BENCHMARK: BERS_Policy
 POSITIONS: 6,401

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 6,815,722,435
 ACCEPTED: 6,316

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	15.72	1.76	100.00	0.02
N America	78.85	79.63	-0.78	14.96	1.42	80.80	0.01
EMEA	11.34	9.59	1.75	22.59	0.30	16.91	0.03
Asia Pacific	8.82	9.67	-0.85	19.35	0.04	2.09	0.01
Latin-S America	0.50	0.71	-0.21	35.25	0.00	0.09	0.03
Rest of World	0.44	0.41	0.03	5.16	0.00	0.10	-0.00
N/A	0.05	0.00	0.05	5.07	-0.00	-0.00	-0.00



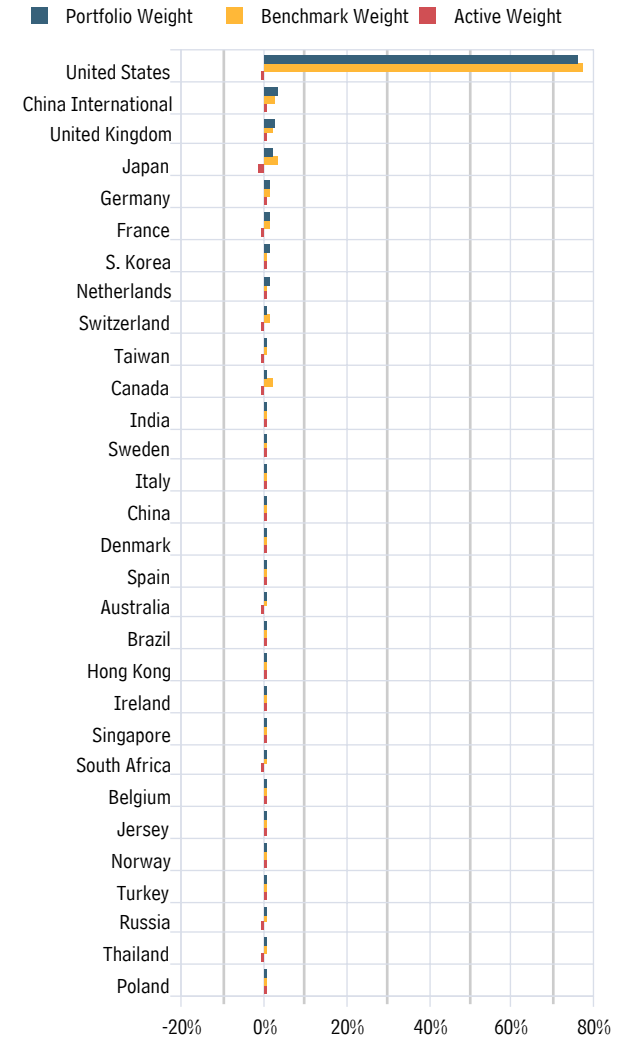
BarraOne Total Plan Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: BERS_Total Plan
 BENCHMARK: BERS_Policy
 POSITIONS: 6,401

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 6,815,722,435
 ACCEPTED: 6,316

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	15.72	1.76	100.00	0.02
United States	76.14	77.03	-0.89	14.89	1.38	78.31	0.01
China International	3.32	2.63	0.69	22.69	0.02	1.15	0.03
United Kingdom	2.72	2.00	0.72	27.73	0.10	5.68	0.03
Japan	2.17	3.21	-1.04	18.06	0.01	0.85	-0.00
Germany	1.58	1.22	0.35	22.35	0.04	2.16	0.03
France	1.04	1.40	-0.36	23.53	0.01	0.40	0.03
S. Korea	1.03	0.86	0.17	30.21	0.01	0.29	0.02
Netherlands	1.02	0.68	0.35	24.76	0.03	1.48	0.03
Switzerland	0.97	1.30	-0.33	20.17	0.02	1.09	0.02
Taiwan	0.86	0.89	-0.03	21.59	0.00	0.19	0.02
Canada	0.83	1.66	-0.83	18.06	0.01	0.56	0.01
India	0.82	0.59	0.24	31.70	0.01	0.39	0.02
Sweden	0.78	0.40	0.39	29.11	0.04	2.05	0.05
Italy	0.69	0.33	0.36	26.10	0.02	1.35	0.04
China	0.49	0.37	0.12	19.99	0.00	0.11	0.01
Denmark	0.47	0.29	0.18	26.06	0.02	1.10	0.04
Spain	0.45	0.32	0.13	22.30	0.01	0.34	0.02
Australia	0.44	0.87	-0.43	27.66	-0.00	-0.23	0.01
Brazil	0.42	0.39	0.03	47.07	0.01	0.36	0.04
Hong Kong	0.42	0.41	0.01	26.46	0.00	0.11	0.02
Ireland	0.41	0.14	0.27	11.53	0.00	0.09	0.01
Singapore	0.34	0.16	0.17	25.32	0.00	0.23	0.02
South Africa	0.26	0.27	-0.02	38.47	0.00	0.01	0.02
Belgium	0.23	0.16	0.07	26.62	0.01	0.41	0.03
Jersey	0.22	0.00	0.22	0.00	-0.00	-0.04	-0.00
Norway	0.22	0.09	0.13	35.43	0.01	0.40	0.03
Turkey	0.20	0.03	0.17	37.39	0.00	0.16	0.01
Russia	0.19	0.27	-0.08	36.18	0.00	0.03	0.02
Thailand	0.16	0.18	-0.01	32.29	0.00	0.03	0.02
Poland	0.16	0.06	0.10	29.05	0.01	0.42	0.05



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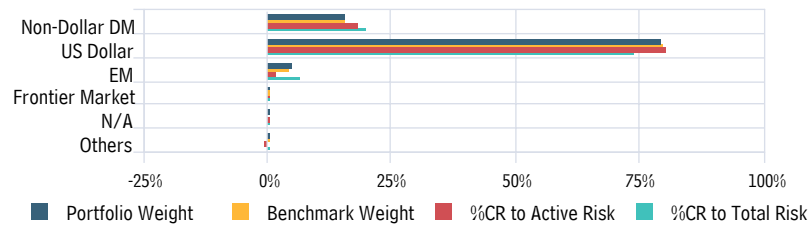
BarraOne Total Plan Summary

COMPANY: NYCERS - BERS
 PORTFOLIO: BERS_Total Plan
 BENCHMARK: BERS_Policy
 POSITIONS: 6,401

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 6,815,722,435
 ACCEPTED: 6,316

Portfolio Allocation by Currency

Exposure by Market



Developed Market Currency

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	5,414,874,295.31	80.14	73.58
Euro	328,642,009.56	6.60	6.30
Hong Kong Dollar	220,538,159.72	0.73	3.34
British Pound Sterling	159,192,430.46	5.69	4.11
Japanese Yen	145,142,970.14	0.83	1.84

Emerging Market Currency

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
Korean Won	62,640,078.06	0.16	1.39
New Taiwan Dollar	58,596,538.83	0.19	0.92
Indian Rupee	56,171,981.96	0.39	1.18
Chinese Yuan	32,754,369.41	0.10	0.31
Brazilian Real	28,574,941.26	0.37	0.84

Top 15 Currencies by Weight%

Weight (%)

Currency of Exposure	Portfolio	Benchmark	Active	Total Risk	CR to TR	CR to TR (%)	CR to AR	CR to AR (%)
Total	100.00	100.00	-0.00	15.72	15.72	100.00	1.76	100.00
US Dollar	79.45	79.67	-0.22	14.70	11.57	73.58	1.41	80.14
Euro	4.82	3.92	0.90	23.44	0.99	6.30	0.12	6.60
Hong Kong Dollar	3.24	2.75	0.49	21.63	0.53	3.34	0.01	0.73
British Pound Sterling	2.34	1.72	0.61	31.28	0.65	4.11	0.10	5.69
Japanese Yen	2.13	3.10	-0.98	18.38	0.29	1.84	0.01	0.83
Korean Won	0.92	0.84	0.07	29.96	0.22	1.39	0.00	0.16
Swiss Franc	0.90	1.26	-0.36	20.90	0.16	1.00	0.02	1.07
New Taiwan Dollar	0.86	0.89	-0.03	21.59	0.15	0.92	0.00	0.19
Indian Rupee	0.82	0.58	0.24	31.70	0.19	1.18	0.01	0.39
Chinese Yuan	0.48	0.34	0.14	20.21	0.05	0.31	0.00	0.10
Danish Krone	0.47	0.29	0.19	26.06	0.07	0.47	0.02	1.10
Swedish Krona	0.47	0.37	0.09	30.09	0.12	0.74	0.02	1.26
Brazilian Real	0.42	0.37	0.05	47.58	0.13	0.84	0.01	0.37
Canadian Dollar	0.40	1.22	-0.82	27.77	0.10	0.61	0.01	0.55
Australian Dollar	0.39	0.82	-0.43	29.44	0.10	0.61	-0.00	-0.26



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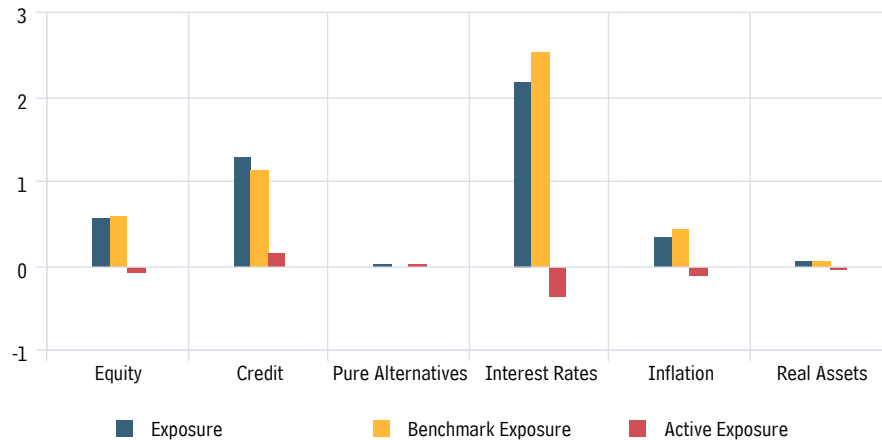
BarraOne Total Plan Macro Summary

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.

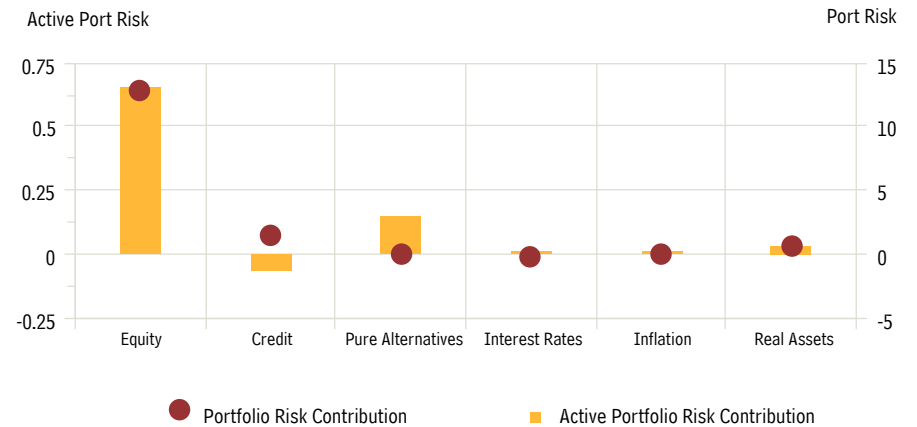
COMPANY: NYCRC - BERS
 PORTFOLIO: BERS_Total Plan
 BENCHMARK: BERS_Policy
 POSITIONS: 6,401
 MODEL: BIM303L (Tier 1 Macro Factors)

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 6,798,129,839
 ACCEPTED: 6,314

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	-	-	-	14.79	100.00	1.45	100.00
Local Market Risk	-	-	-	14.38	97.23	1.44	99.18
Common Factor Risk	-	-	-	14.32	96.83	1.16	79.82
Equity	0.56	0.62	-0.05	12.83	86.74	0.65	44.90
Credit	1.30	1.14	0.17	1.40	9.47	-0.07	-4.71
Pure Alternatives	0.03	0.00	0.03	0.01	0.10	0.15	10.01
Interest Rates	2.19	2.53	-0.34	-0.20	-1.32	0.01	0.69
Inflation	0.36	0.44	-0.08	0.09	0.64	0.01	0.74
Real Assets	0.06	0.06	-0.01	0.60	4.04	0.03	1.96
Factor Residual Risk	-	-	-	-0.42	-2.83	0.38	26.23
Selection Risk	-	-	-	0.06	0.39	0.28	19.36
Currency Risk	-	-	-	0.41	2.77	0.01	0.82

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	-0.17	-1.17	0.03	2.00
Fixed Income	-0.35	-2.38	0.04	2.68
Hedge Fund	0.00	0.00	0.00	0.00
Private Equity	0.02	0.10	0.16	10.82
Private Real Estate	0.09	0.62	0.16	10.74
Unassigned Factors	0.00	0.00	0.00	0.00



BarraOne Total Plan Summary

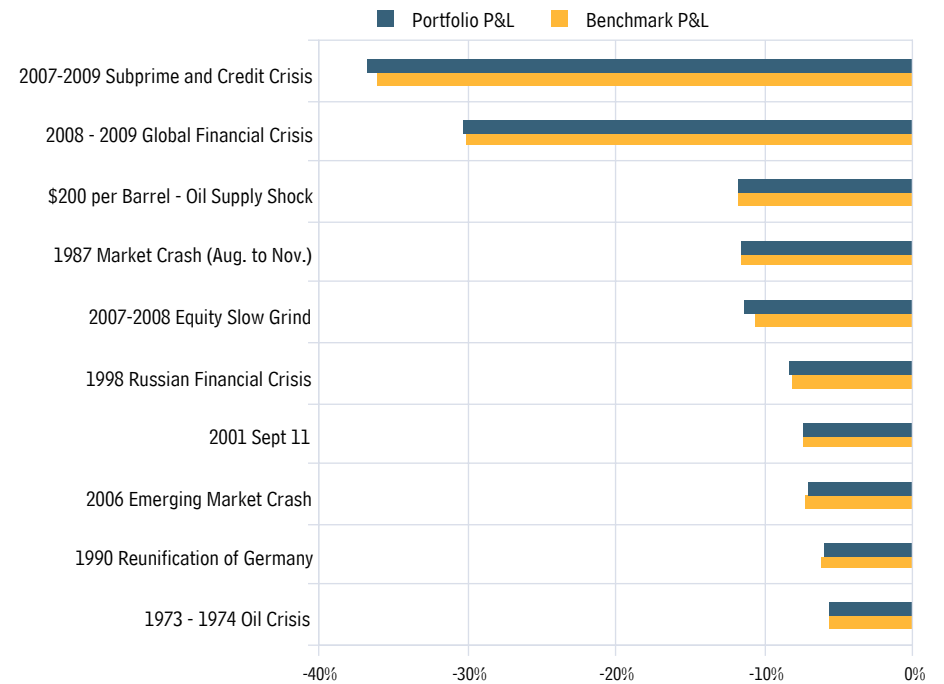
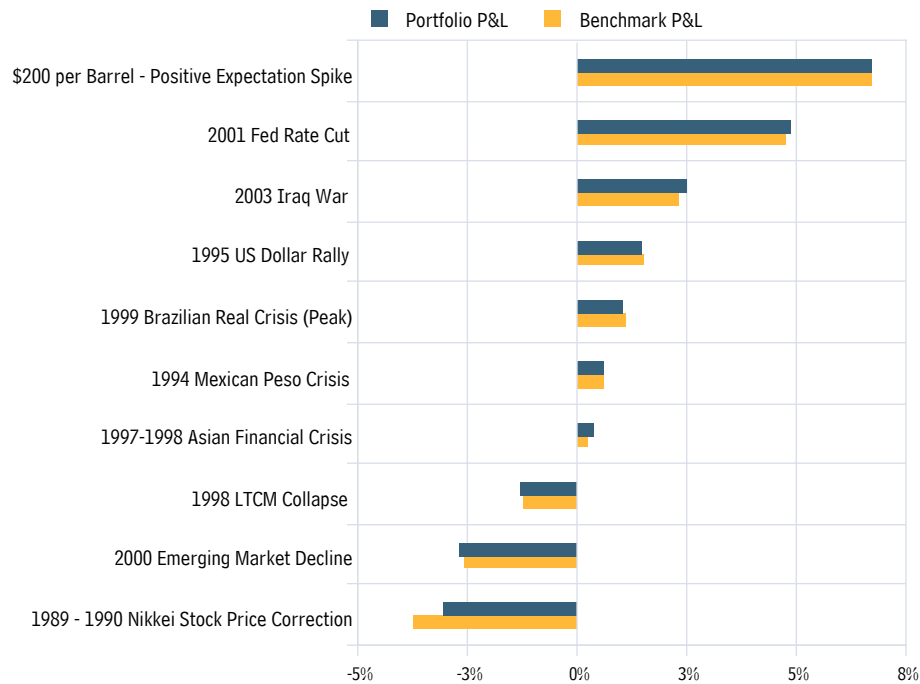
COMPANY: NYCERS - BERS
 PORTFOLIO: BERS_Total Plan
 BENCHMARK: BERS_Policy
 POSITIONS: 6,401
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 6,815,722,435
 ACCEPTED: 6,316

Stress Scenarios

Top 10 Best Scenarios			
Scenario	Portfolio P&L	Benchmark P&L	Market Change (\$)
\$200 per Barrel - Positive Expectation S	6.74	6.68	459,094,580
2001 Fed Rate Cut	4.91	4.76	334,494,569
2003 Iraq War	2.47	2.34	168,524,533
1995 US Dollar Rally	1.47	1.52	100,462,857
1999 Brazilian Real Crisis (Peak)	1.04	1.10	71,071,454
1994 Mexican Peso Crisis	0.61	0.63	41,566,716
1997-1998 Asian Financial Crisis	0.37	0.27	24,907,858
1998 LTCM Collapse	-1.27	-1.19	-86,506,450
2000 Emerging Market Decline	-2.65	-2.56	-180,867,353
1989 - 1990 Nikkei Stock Price Correctio	-3.06	-3.74	-208,775,540

Top 10 Worst Scenarios			
Scenario	Portfolio P&L	Benchmark P&L	Market Change (\$)
2007-2009 Subprime and Credit Crisis	-36.68	-36.04	-2,500,312,514
2008 - 2009 Global Financial Crisis	-30.23	-30.02	-2,060,343,736
\$200 per Barrel - Oil Supply Shock	-11.67	-11.69	-795,261,231
1987 Market Crash (Aug. to Nov.)	-11.51	-11.58	-784,165,890
2007-2008 Equity Slow Grind	-11.28	-10.66	-769,028,413
1998 Russian Financial Crisis	-8.24	-8.04	-561,527,894
2001 Sept 11	-7.48	-7.43	-509,561,407
2006 Emerging Market Crash	-7.10	-7.20	-484,141,773
1990 Reunification of Germany	-5.90	-6.20	-402,019,430
1973 - 1974 Oil Crisis	-5.60	-5.62	-381,565,773



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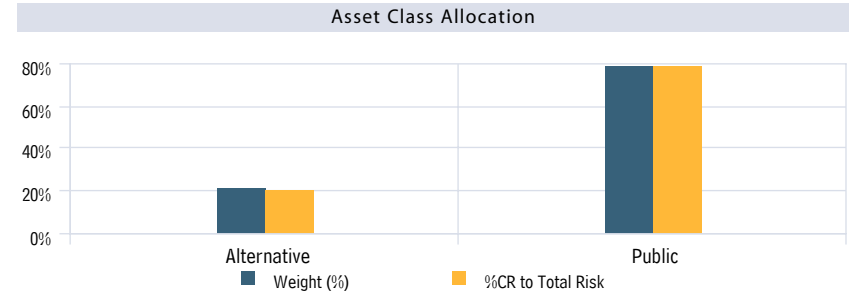
BarraOne Equity Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: EQUITY
 BENCHMARK: EQUITY
 POSITIONS: 3,151
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 4,540,231,176
 ACCEPTED: 3,073

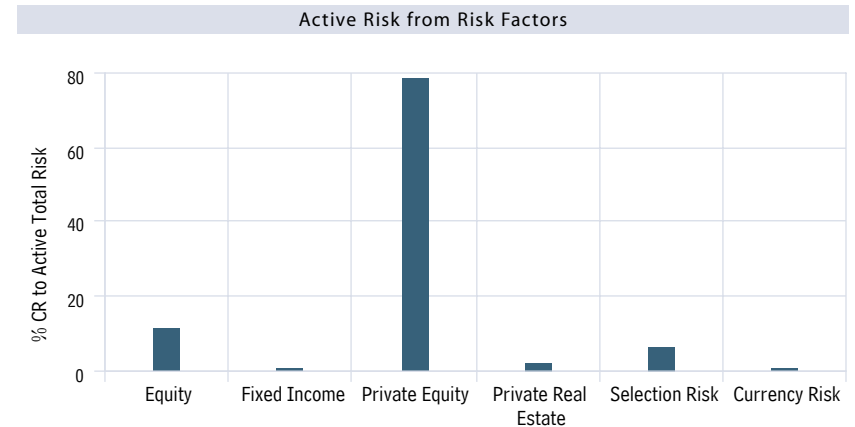
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	22.41	Total	4,540,231,176	100.00	22.41	22.41	100.00
Benchmark Risk	21.93	Alternative	979,491,367	21.57	23.75	4.69	20.93
Active Risk	2.59	Public	3,560,739,809	78.43	22.75	17.72	79.07
Portfolio Beta	1.02						



Risk Factor Breakdown

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	22.41	100.00	1.00	2.59	100.00	1.00
Local Market Risk	21.80	97.24	1.00	2.57	99.15	1.00
Common Factor Risk	21.73	96.95	1.00	2.41	92.92	0.96
Equity	20.39	90.96	0.99	0.30	11.75	0.34
Style	0.16	0.69	0.32	0.13	5.20	0.25
Industry	20.23	90.27	0.99	0.17	6.55	0.27
Fixed Income	0.10	0.43	0.56	0.02	0.69	0.12
Nominal Rates	-0.03	-0.15	-0.32	-0.01	-0.22	-0.05
Credit	0.13	0.59	0.74	0.03	1.08	0.16
Private Real Estate	1.01	4.51	0.74	0.05	1.88	0.10
Private Equity	0.24	1.05	0.10	2.04	78.60	0.89
Selection Risk	0.06	0.29	0.05	0.16	6.22	0.25
Currency Risk	0.62	2.76	0.42	0.02	0.85	0.10



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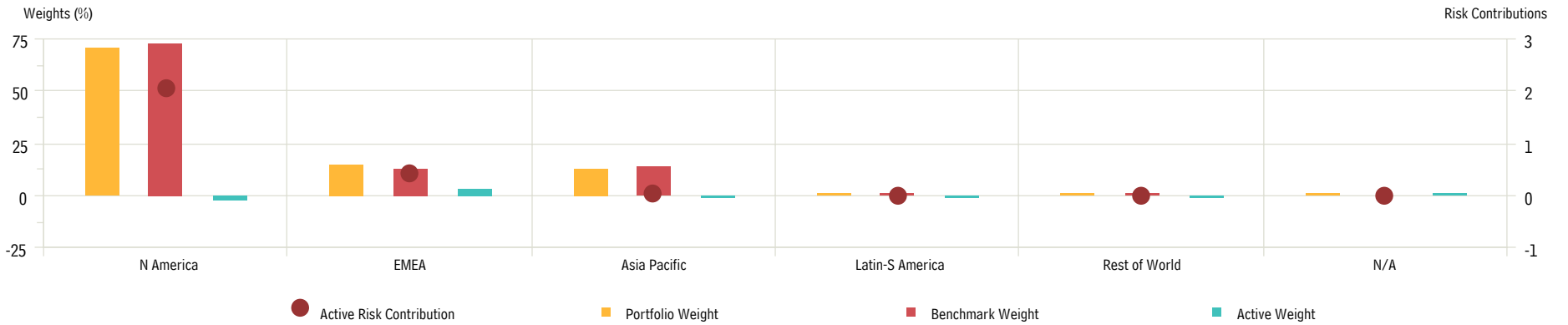
BarraOne Equity Summary

COMPANY: NYCRC - BERS
 PORTFOLIO: EQUITY
 BENCHMARK: EQUITY
 POSITIONS: 3,151
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 4,540,231,176
 ACCEPTED: 3,073

Portfolio Allocation by Region

Region	Weight (%)			Active	Total Risk	Active Risk CR	% of Active TR	MC to Total Tracking Error
	Portfolio	Benchmark	Active					
Total	100.00	100.00	0.00		22.41	2.59	100.00	0.03
Asia Pacific	13.10	13.80	-0.70		19.51	0.06	2.42	0.00
EMEA	15.30	12.46	2.84		24.42	0.45	17.24	0.03
Latin-S America	0.63	0.82	-0.19		39.92	0.00	0.12	0.03
N America	70.78	72.78	-2.00		23.56	2.08	80.19	0.02
N/A	0.08	0.00	0.08		5.07	-0.00	-0.07	-0.02
Rest of World	0.11	0.14	-0.03		20.50	0.00	0.09	0.01



BarraOne Equity Summary

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 BENCHMARK: EQUITY
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CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 4,540,231,176
 ACCEPTED: 3,073

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	22.41	2.59	100.00	0.03
United States	67.31	69.61	-2.30	23.83	2.02	77.88	0.05
China International	4.99	3.87	1.11	22.69	0.02	0.85	0.05
United Kingdom	3.54	2.53	1.01	31.05	0.15	5.86	0.06
Japan	3.20	4.57	-1.37	18.38	0.04	1.49	0.02
Germany	2.31	1.66	0.64	22.76	0.05	1.91	0.06
S. Korea	1.54	1.24	0.30	30.21	0.01	0.27	0.05
France	1.47	1.96	-0.49	24.46	0.01	0.45	0.05
Netherlands	1.38	0.77	0.60	27.13	0.04	1.52	0.06
Switzerland	1.36	1.85	-0.49	20.82	0.04	1.35	0.04
Taiwan	1.29	1.31	-0.02	21.59	0.01	0.26	0.03
India	1.24	0.86	0.38	31.70	0.01	0.35	0.05
Sweden	1.15	0.55	0.61	29.67	0.05	2.06	0.07
Italy	0.98	0.41	0.57	27.02	0.03	1.17	0.06
China	0.73	0.50	0.23	19.99	-0.00	-0.07	0.02
Denmark	0.71	0.42	0.29	26.06	0.03	1.12	0.06
Canada	0.65	1.79	-1.14	26.63	0.02	0.61	0.04
Spain	0.65	0.43	0.21	22.93	0.01	0.21	0.04
Brazil	0.63	0.55	0.08	47.33	0.01	0.32	0.06
Australia	0.62	1.21	-0.59	28.93	-0.00	-0.11	0.04
Hong Kong	0.61	0.58	0.03	27.04	0.00	0.09	0.03
Singapore	0.50	0.23	0.28	25.32	0.00	0.12	0.04
South Africa	0.38	0.40	-0.02	38.78	0.00	0.02	0.04
Norway	0.33	0.09	0.23	35.43	0.01	0.39	0.06
Belgium	0.32	0.17	0.15	28.57	0.01	0.38	0.06
Turkey	0.31	0.05	0.26	37.39	0.00	0.11	0.04
Russia	0.29	0.34	-0.05	36.18	0.00	0.04	0.04
Thailand	0.24	0.26	-0.02	32.29	0.00	0.05	0.04
Poland	0.24	0.08	0.16	29.05	0.01	0.39	0.08
Ireland	0.22	0.12	0.10	28.22	0.00	0.06	0.05
Finland	0.14	0.18	-0.04	37.54	0.01	0.20	0.06



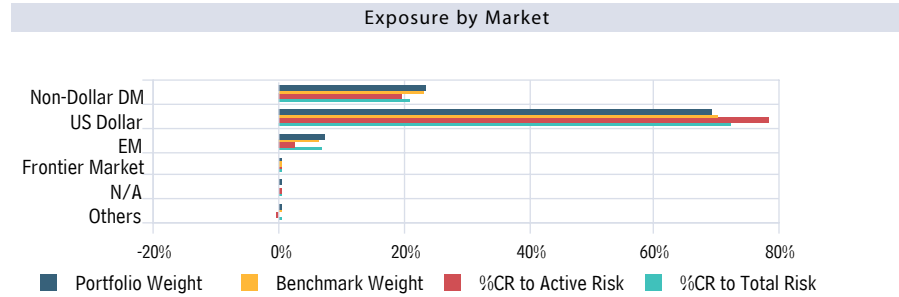
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BarraOne Equity Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: EQUITY
 BENCHMARK: EQUITY
 POSITIONS: 3,151
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 4,540,231,176
 ACCEPTED: 3,073

Portfolio Allocation by Currency



Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	3,139,383,036.40	79.24	72.18
Euro	328,642,009.56	6.41	6.64
Hong Kong Dollar	220,538,159.72	0.44	3.53
British Pound Sterling	159,192,430.46	5.88	4.34
Japanese Yen	145,142,970.14	1.49	1.94

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
Korean Won	62,640,078.06	0.15	1.47
New Taiwan Dollar	58,596,538.83	0.26	0.97
Indian Rupee	56,171,981.96	0.35	1.22
Chinese Yuan	32,754,369.41	-0.06	0.33
Brazilian Real	28,574,941.26	0.33	0.87

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	22.41	22.41	100.00	2.59	100.00
US Dollar	69.15	70.10	-0.95	23.66	16.18	72.18	2.05	79.24
Euro	7.24	5.76	1.48	23.44	1.49	6.64	0.17	6.41
Hong Kong Dollar	4.86	4.04	0.82	21.63	0.79	3.53	0.01	0.44
British Pound Sterling	3.51	2.53	0.97	31.28	0.97	4.34	0.15	5.88
Japanese Yen	3.20	4.57	-1.37	18.38	0.43	1.94	0.04	1.49
Korean Won	1.38	1.24	0.14	29.96	0.33	1.47	0.00	0.15
Swiss Franc	1.36	1.85	-0.50	20.90	0.24	1.06	0.04	1.36
New Taiwan Dollar	1.29	1.31	-0.02	21.59	0.22	0.97	0.01	0.26
Indian Rupee	1.24	0.86	0.38	31.70	0.27	1.22	0.01	0.35
Chinese Yuan	0.72	0.50	0.22	20.21	0.07	0.33	-0.00	-0.06
Danish Krone	0.71	0.42	0.29	26.06	0.11	0.49	0.03	1.12
Swedish Krona	0.70	0.55	0.15	30.09	0.18	0.78	0.03	1.34
Brazilian Real	0.63	0.55	0.08	47.58	0.20	0.87	0.01	0.33
Canadian Dollar	0.60	1.79	-1.19	27.77	0.14	0.64	0.02	0.61
Australian Dollar	0.58	1.21	-0.62	29.44	0.14	0.64	-0.00	-0.13



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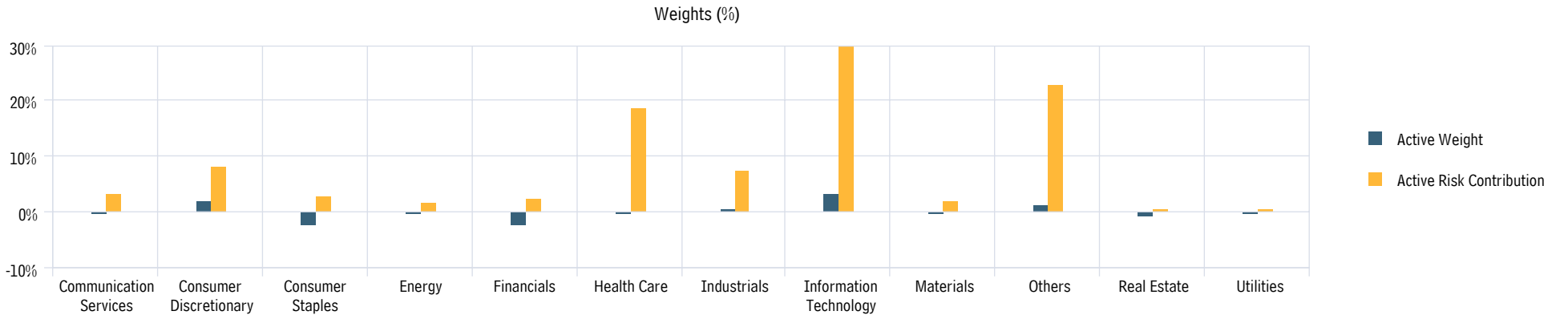
BarraOne Equity Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: EQUITY
 BENCHMARK: EQUITY
 POSITIONS: 3,151
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 4,540,231,176
 ACCEPTED: 3,073

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	22.41	2.59	100.00	0.03
Communication Services	8.15	8.35	-0.20	20.12	0.08	3.00	0.04
Consumer Discretionary	12.69	10.74	1.95	25.24	0.21	8.26	0.06
Consumer Staples	4.51	6.70	-2.19	17.82	0.07	2.74	0.02
Energy	2.55	3.07	-0.51	41.75	0.05	1.74	0.07
Financials	9.68	11.86	-2.19	28.96	0.07	2.52	0.05
Health Care	11.89	12.01	-0.13	21.60	0.48	18.57	0.08
Industrials	8.75	8.54	0.21	27.72	0.19	7.43	0.06
Information Technology	22.44	19.45	2.98	23.89	0.78	30.00	0.09
Materials	3.89	3.91	-0.02	25.78	0.05	1.95	0.05
Others	10.76	9.53	1.23	19.25	0.60	23.10	0.02
Real Estate	2.41	3.02	-0.61	28.30	0.01	0.34	0.04
Utilities	2.29	2.81	-0.52	19.06	0.01	0.34	0.02



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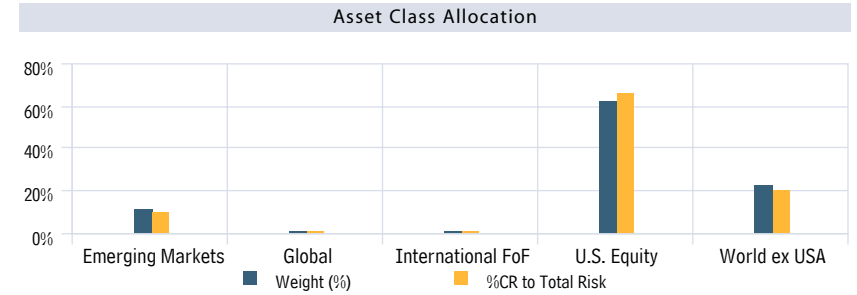
BarraOne Equity Summary

COMPANY: NYCRC - BERS
 PORTFOLIO: Public Equity
 BENCHMARK: Public
 POSITIONS: 2,987
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 3,560,739,809
 ACCEPTED: 2,909

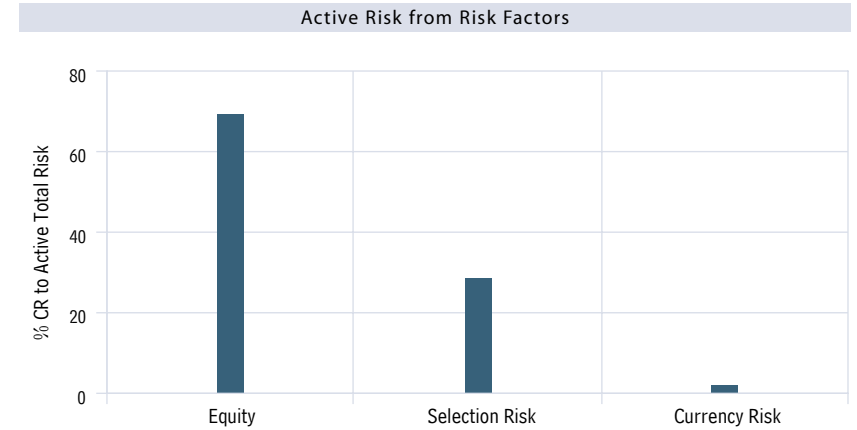
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	22.75	Total	3,560,739,809	100.00	22.75	22.75	100.00
Benchmark Risk	22.68	Emerging Markets	421,116,292	11.83	22.29	2.33	10.25
Active Risk	1.19	Global	67,732,995	1.90	21.70	0.38	1.65
Portfolio Beta	1.00	International FoF	59,621,678	1.67	20.45	0.32	1.41
		U.S. Equity	2,212,791,117	62.14	24.52	15.02	66.03
		World ex USA	799,477,727	22.45	22.02	4.70	20.65



Risk Factor Breakdown

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	22.75	100.00	1.00	1.19	100.00	1.00
Local Market Risk	22.14	97.33	1.00	1.16	97.67	0.98
Common Factor Risk	22.04	96.89	1.00	0.83	69.22	0.82
Equity	22.04	96.89	1.00	0.83	69.22	0.82
Style	-0.03	-0.13	-0.05	0.41	34.55	0.61
Industry	22.07	97.02	1.00	0.41	34.67	0.58
Selection Risk	0.10	0.43	0.07	0.34	28.45	0.53
Currency Risk	0.61	2.67	0.42	0.03	2.33	0.12



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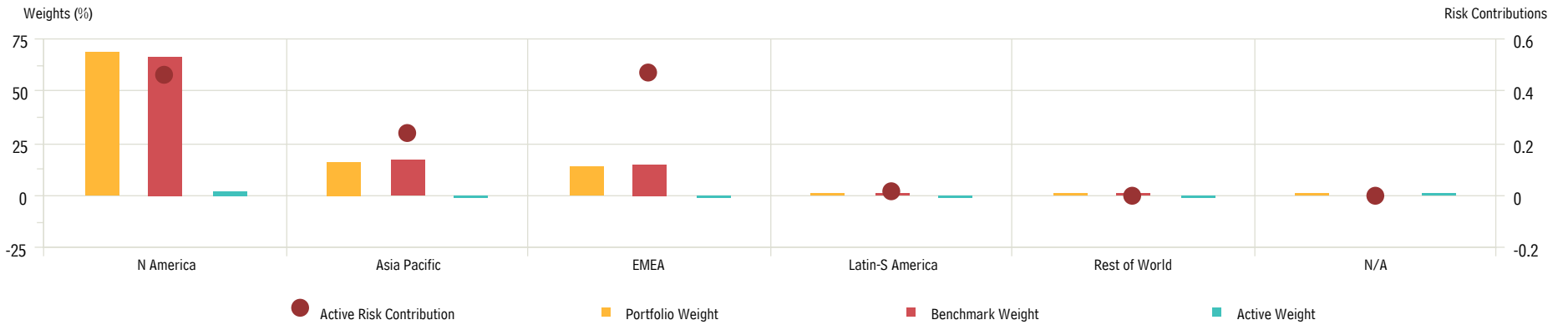
BarraOne Equity Summary

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 ACCEPTED: 2,909

Portfolio Allocation by Region

Region	Weight (%)			Active	Total Risk	Active Risk CR	% of Active TR	MC to Total Tracking Error
	Portfolio	Benchmark	Benchmark					
Total	100.00	100.00	-0.00	22.75	1.19	100.00	0.01	
Asia Pacific	15.66	16.75	-1.10	19.92	0.24	20.39	-0.00	
EMEA	14.14	15.13	-0.99	24.75	0.47	39.57	-0.01	
Latin-S America	0.72	0.99	-0.27	41.86	0.01	1.17	-0.05	
N America	69.27	66.95	2.32	24.03	0.46	38.78	0.02	
N/A	0.10	0.00	0.10	4.69	-0.00	-0.04	-0.01	
Rest of World	0.12	0.18	-0.06	20.95	0.00	0.12	-0.01	



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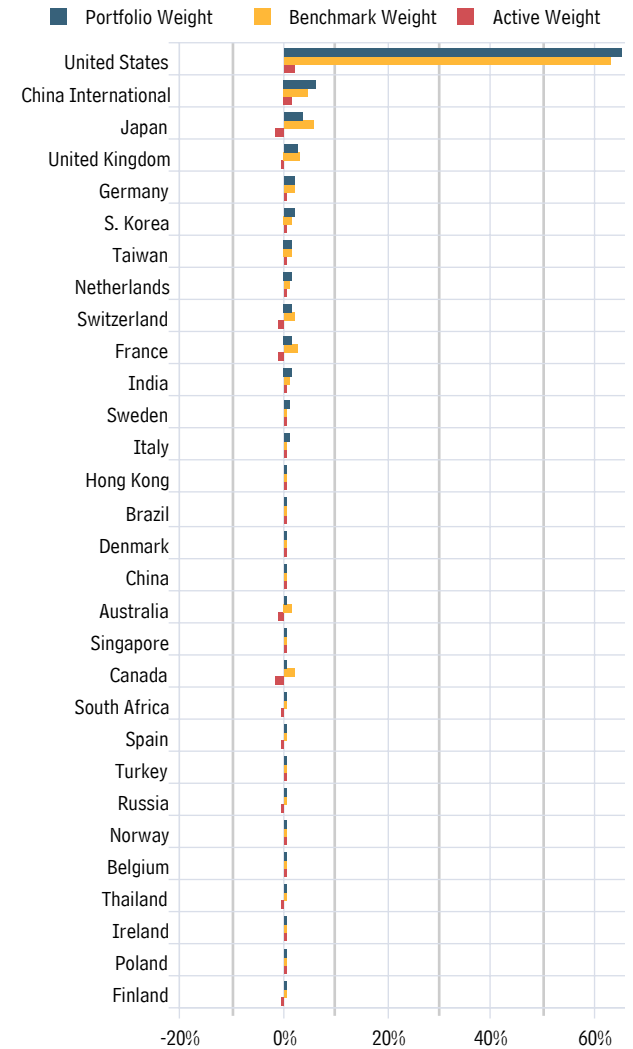
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Top 30 Countries by Weight%

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	22.75	1.19	100.00	0.01
United States	65.21	63.09	2.11	24.38	0.28	23.23	0.03
China International	6.32	4.70	1.62	22.69	0.08	6.46	0.05
Japan	3.77	5.54	-1.77	19.23	0.13	11.09	-0.01
United Kingdom	2.64	3.07	-0.44	32.75	0.09	7.32	-0.02
Germany	2.09	2.02	0.07	26.46	0.13	10.65	0.03
S. Korea	1.94	1.51	0.43	30.43	0.01	0.83	0.01
Taiwan	1.65	1.59	0.05	21.59	0.01	1.07	0.02
Netherlands	1.50	0.94	0.56	29.00	0.07	5.70	0.03
Switzerland	1.41	2.25	-0.84	21.05	0.03	2.33	-0.01
France	1.39	2.38	-0.99	25.57	0.05	3.82	-0.02
India	1.35	1.04	0.31	31.77	0.01	0.79	0.01
Sweden	1.07	0.67	0.41	31.61	0.07	5.52	0.04
Italy	0.90	0.50	0.40	30.05	0.03	2.16	-0.00
Hong Kong	0.77	0.71	0.06	27.26	0.01	0.52	0.01
Brazil	0.74	0.67	0.08	49.35	-0.00	-0.09	-0.05
Denmark	0.72	0.51	0.21	27.04	0.03	2.89	0.05
China	0.70	0.61	0.09	24.95	0.01	0.44	0.03
Australia	0.62	1.47	-0.85	30.83	0.04	3.28	-0.02
Singapore	0.60	0.28	0.32	25.99	0.00	0.17	0.01
Canada	0.50	2.18	-1.68	29.47	0.09	7.72	-0.04
South Africa	0.48	0.49	-0.01	39.29	-0.00	-0.01	-0.02
Spain	0.40	0.53	-0.13	30.67	0.01	1.13	-0.03
Turkey	0.38	0.06	0.32	37.64	-0.01	-0.65	-0.01
Russia	0.36	0.42	-0.06	36.32	0.00	0.37	-0.03
Norway	0.36	0.11	0.25	37.03	-0.00	-0.40	-0.03
Belgium	0.32	0.20	0.12	32.08	0.02	1.47	0.01
Thailand	0.31	0.32	-0.00	32.29	-0.00	-0.03	0.00
Ireland	0.20	0.14	0.06	35.77	0.00	0.34	0.02
Poland	0.18	0.09	0.08	30.83	0.00	0.33	0.02
Finland	0.14	0.22	-0.08	41.30	0.00	0.34	-0.00



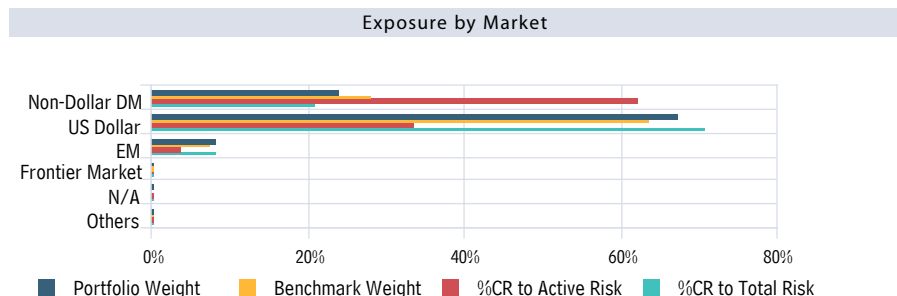
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BarraOne Equity Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Public Equity
 BENCHMARK: Public
 POSITIONS: 2,987
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 3,560,739,809
 ACCEPTED: 2,909

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	2,396,562,161.19	31.37	70.76	Korean Won	61,646,955.82	0.47	1.85
Euro	248,884,468.23	25.32	6.62	New Taiwan Dollar	58,596,538.83	1.07	1.23
Hong Kong Dollar	219,885,696.25	4.08	4.49	Indian Rupee	48,187,819.35	0.79	1.31
Japanese Yen	134,383,970.56	11.09	2.39	Brazilian Real	26,498,893.54	-0.09	1.03
British Pound Sterling	93,834,766.89	7.32	3.40	Chinese Yuan	24,929,720.44	0.44	0.38

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	22.75	22.75	100.00	1.19	100.00
US Dollar	67.31	63.69	3.61	24.20	16.10	70.76	0.37	31.37
Euro	6.99	7.00	-0.01	24.51	1.51	6.62	0.30	25.32
Hong Kong Dollar	6.18	4.91	1.27	21.63	1.02	4.49	0.05	4.08
Japanese Yen	3.77	5.54	-1.77	19.23	0.54	2.39	0.13	11.09
British Pound Sterling	2.64	3.08	-0.44	32.75	0.77	3.40	0.09	7.32
Korean Won	1.73	1.51	0.22	30.20	0.42	1.85	0.01	0.47
New Taiwan Dollar	1.65	1.59	0.05	21.59	0.28	1.23	0.01	1.07
Swiss Franc	1.41	2.25	-0.84	21.05	0.25	1.09	0.03	2.33
Indian Rupee	1.35	1.04	0.31	31.77	0.30	1.31	0.01	0.79
Brazilian Real	0.74	0.67	0.08	49.35	0.24	1.03	-0.00	-0.09
Danish Krone	0.72	0.51	0.21	27.04	0.10	0.44	0.03	2.89
Chinese Yuan	0.70	0.61	0.09	24.95	0.09	0.38	0.01	0.44
Australian Dollar	0.57	1.47	-0.90	31.60	0.15	0.65	0.04	3.15
Swedish Krona	0.50	0.67	-0.17	29.25	0.12	0.53	0.01	0.99
Canadian Dollar	0.49	2.18	-1.68	29.47	0.12	0.51	0.09	7.73



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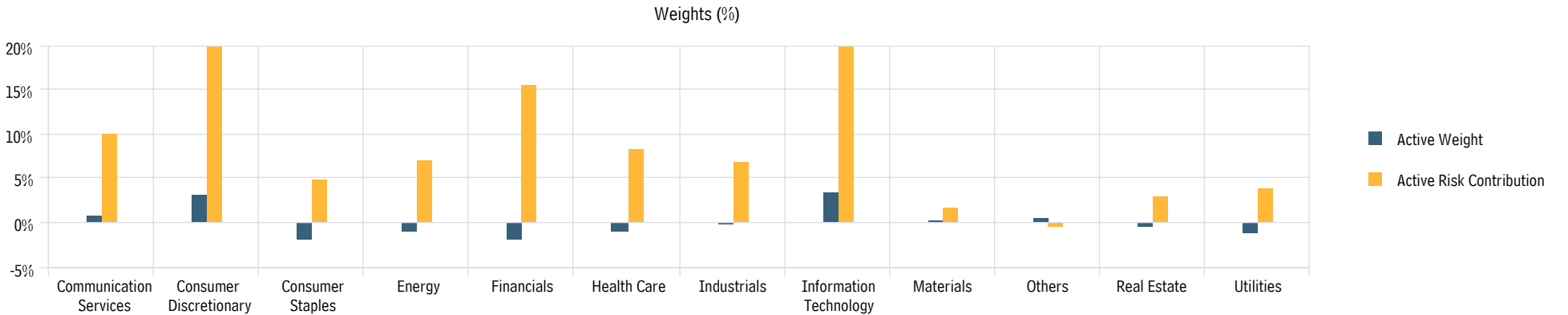
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Portfolio Allocation by GICS Sector

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	22.75	1.19	100.00	0.01
Communication Services	9.85	9.18	0.67	19.96	0.12	9.95	0.02
Consumer Discretionary	15.04	11.93	3.11	25.06	0.24	19.81	0.03
Consumer Staples	5.48	7.51	-2.03	17.61	0.06	4.84	-0.02
Energy	2.54	3.47	-0.92	42.15	0.08	7.00	-0.06
Financials	11.48	13.37	-1.89	29.32	0.18	15.42	-0.02
Health Care	12.05	13.12	-1.07	20.31	0.10	8.24	0.03
Industrials	9.28	9.50	-0.22	28.70	0.08	6.79	-0.00
Information Technology	24.31	21.00	3.30	23.17	0.24	19.80	0.05
Materials	4.65	4.48	0.17	25.77	0.02	1.58	-0.00
Others	0.57	0.00	0.57	0.59	-0.00	-0.39	0.00
Real Estate	2.75	3.31	-0.56	29.43	0.04	2.99	-0.00
Utilities	1.98	3.12	-1.14	25.54	0.05	3.96	-0.03



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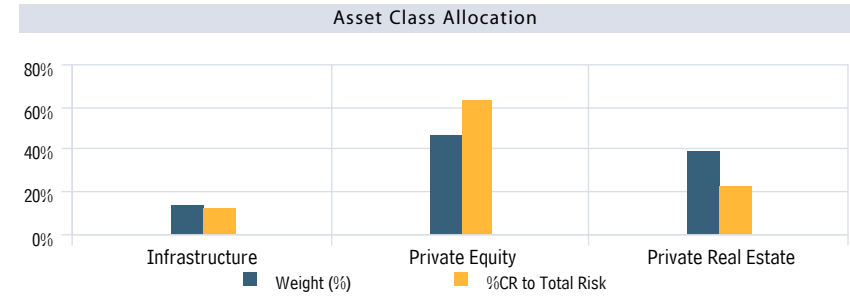
BarraOne Equity Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Alternative
 BENCHMARK: Alternative
 POSITIONS: 164
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 979,491,367
 ACCEPTED: 164

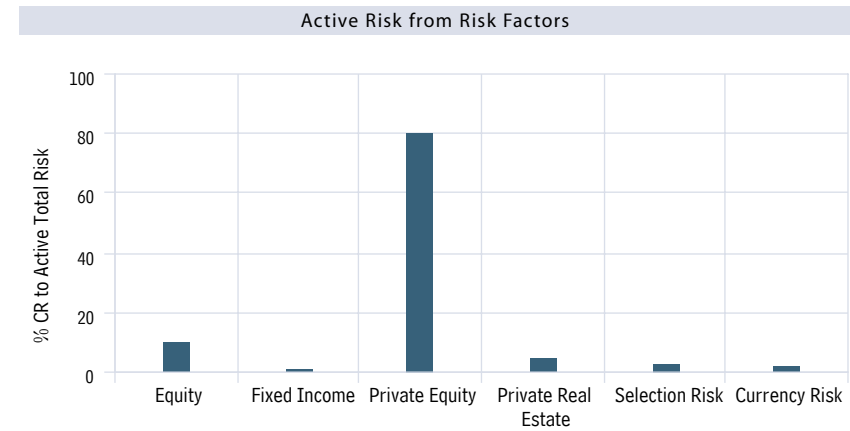
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	23.75	Total	979,491,367	100.00	23.75	23.75	100.00
Benchmark Risk	19.93	Infrastructure	137,737,232	14.06	22.74	2.99	12.60
Active Risk	11.91	Private Equity	457,245,309	46.68	33.72	15.23	64.13
Portfolio Beta	1.03	Private Real Estate	384,508,826	39.26	17.80	5.53	23.27



Risk Factor Breakdown

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	23.75	100.00	1.00	11.91	100.00	1.00
Local Market Risk	23.16	97.51	1.00	11.64	97.77	0.99
Common Factor Risk	23.10	97.26	1.00	11.31	94.93	0.98
Equity	13.09	55.09	0.87	1.18	9.95	0.27
Style	0.78	3.29	0.60	0.27	2.26	0.21
Industry	12.30	51.80	0.86	0.92	7.69	0.26
Fixed Income	0.44	1.84	0.54	0.08	0.69	0.12
Nominal Rates	-0.12	-0.50	-0.24	-0.05	-0.46	-0.11
Real Rates	0.00	0.00	0.00	-0.03	-0.28	-0.13
Credit	0.56	2.34	0.67	0.17	1.43	0.21
Private Real Estate	4.80	20.22	0.76	0.51	4.25	0.12
Private Equity	4.78	20.12	0.45	9.53	80.03	0.89
Selection Risk	0.06	0.25	0.05	0.34	2.85	0.17
Currency Risk	0.59	2.49	0.39	0.27	2.23	0.17



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BarraOne Equity Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Alternative
 BENCHMARK: Alternative
 POSITIONS: 164
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 979,491,367
 ACCEPTED: 164

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	23.75	11.91	100.00	0.12
Asia Pacific	3.81	0.00	3.81	16.90	0.07	0.60	0.02
EMEA	19.52	0.00	19.52	27.91	2.29	19.24	0.10
Latin-S America	0.29	0.00	0.29	32.79	0.05	0.45	0.19
N America	76.28	100.00	-23.72	25.32	9.48	79.61	0.04
N/A	0.02	0.00	0.02	28.27	0.00	0.01	0.05
Rest of World	0.08	0.00	0.08	31.89	0.01	0.09	0.13



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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	23.75	11.91	100.00	0.12
United States	74.97	100.00	-25.03	25.39	9.35	78.48	0.05
United Kingdom	6.81	0.00	6.81	32.18	0.87	7.27	0.13
Germany	3.09	0.00	3.09	18.35	0.22	1.81	0.08
France	1.78	0.00	1.78	27.45	0.19	1.61	0.12
Spain	1.55	0.00	1.55	19.98	0.07	0.60	0.06
Sweden	1.44	0.00	1.44	36.93	0.22	1.85	0.16
Italy	1.27	0.00	1.27	26.36	0.14	1.14	0.12
Canada	1.21	0.00	1.21	26.00	0.13	1.10	0.12
Switzerland	1.20	0.00	1.20	27.46	0.14	1.15	0.13
Japan	1.10	0.00	1.10	17.82	0.00	0.03	0.01
Netherlands	0.91	0.00	0.91	25.03	0.09	0.76	0.11
China	0.84	0.00	0.84	13.07	0.00	0.01	0.01
India	0.82	0.00	0.82	36.18	0.04	0.31	0.06
Denmark	0.66	0.00	0.66	38.85	0.11	0.92	0.18
Australia	0.63	0.00	0.63	27.65	0.02	0.15	0.04
Poland	0.47	0.00	0.47	35.27	0.06	0.50	0.14
Belgium	0.33	0.00	0.33	30.10	0.04	0.37	0.14
Ireland	0.25	0.00	0.25	13.25	0.00	0.04	0.03
Brazil	0.23	0.00	0.23	38.84	0.05	0.44	0.24
Norway	0.21	0.00	0.21	32.72	0.03	0.21	0.13
Singapore	0.16	0.00	0.16	24.41	0.00	0.04	0.04
Portugal	0.15	0.00	0.15	32.83	0.02	0.16	0.14
Finland	0.14	0.00	0.14	41.14	0.02	0.20	0.18
Israel	0.14	0.00	0.14	39.49	0.02	0.19	0.17
China International	0.12	0.00	0.12	32.52	0.01	0.04	0.05
Greece	0.12	0.00	0.12	48.36	0.02	0.17	0.18
S. Korea	0.10	0.00	0.10	20.07	0.00	0.02	0.04
Austria	0.09	0.00	0.09	23.30	0.01	0.05	0.08
Indonesia	0.07	0.00	0.07	43.76	0.00	0.02	0.05
Czech Rep	0.06	0.00	0.06	24.21	0.01	0.05	0.10



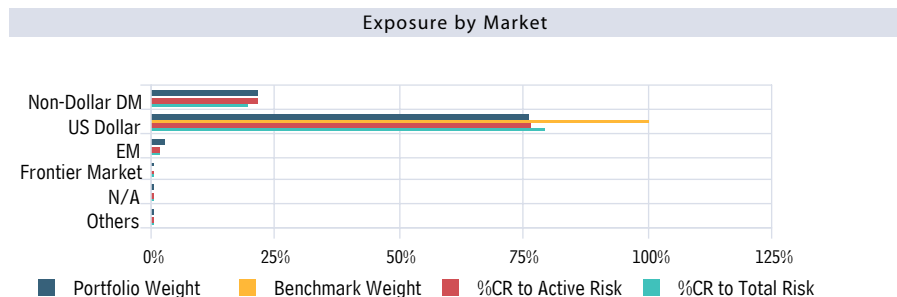
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BarraOne Equity Summary

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 BENCHMARK: Alternative
 POSITIONS: 164
 MODEL: BIM303L

CURRENCY: USD
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 MARKET VALUE: 979,491,367
 ACCEPTED: 164

Portfolio Allocation by Currency



Developed Market Currency

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	742,820,875.21	78.56	79.00
Euro	79,757,541.33	6.95	6.43
British Pound Sterling	65,357,663.58	7.27	7.23
Swedish Krona	14,148,463.54	1.85	1.62
Swiss Franc	11,459,681.26	1.15	0.91

Emerging Market Currency

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
Indian Rupee	7,984,162.62	0.31	0.69
Chinese Yuan	7,824,648.97	0.01	0.12
Polish Zloty	4,595,856.10	0.50	0.38
Brazilian Real	2,076,047.72	0.43	0.26
Korean Won	993,122.24	0.02	0.05

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	Active					
Total	100.00	100.00	0.00	23.75	23.75	100.00	11.91	100.00	
US Dollar	75.84	100.00	-24.16	25.18	18.77	79.00	9.36	78.56	
Euro	8.14	0.00	8.14	24.86	1.53	6.43	0.83	6.95	
British Pound Sterling	6.67	0.00	6.67	32.77	1.72	7.23	0.87	7.27	
Swedish Krona	1.44	0.00	1.44	36.93	0.39	1.62	0.22	1.85	
Swiss Franc	1.17	0.00	1.17	28.03	0.22	0.91	0.14	1.15	
Japanese Yen	1.10	0.00	1.10	17.82	0.06	0.25	0.00	0.03	
Canadian Dollar	1.00	0.00	1.00	29.14	0.25	1.06	0.13	1.06	
Indian Rupee	0.82	0.00	0.82	36.18	0.16	0.69	0.04	0.31	
Chinese Yuan	0.80	0.00	0.80	13.65	0.03	0.12	0.00	0.01	
Danish Krone	0.66	0.00	0.66	38.85	0.16	0.68	0.11	0.92	
Australian Dollar	0.63	0.00	0.63	27.65	0.12	0.49	0.02	0.15	
Polish Zloty	0.47	0.00	0.47	35.27	0.09	0.38	0.06	0.50	
Brazilian Real	0.21	0.00	0.21	41.65	0.06	0.26	0.05	0.43	
Norwegian Krone	0.18	0.00	0.18	36.86	0.05	0.21	0.03	0.21	
Singapore Dollar	0.16	0.00	0.16	24.96	0.02	0.09	0.00	0.04	



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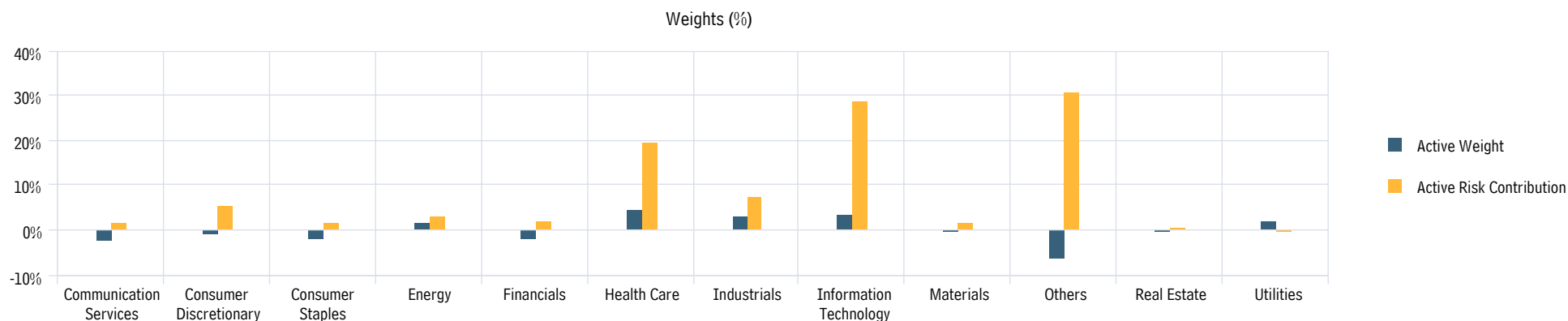
BarraOne Equity Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Alternative
 BENCHMARK: Alternative
 POSITIONS: 164
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 979,491,367
 ACCEPTED: 164

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	23.75	11.91	100.00	0.12
Communication Services	1.99	4.51	-2.52	29.89	0.16	1.33	0.06
Consumer Discretionary	4.13	5.20	-1.07	33.27	0.62	5.17	0.12
Consumer Staples	0.96	2.88	-1.92	30.89	0.15	1.23	0.06
Energy	2.59	1.20	1.39	47.41	0.33	2.81	0.16
Financials	3.12	4.84	-1.72	28.72	0.25	2.09	0.11
Health Care	11.31	6.85	4.45	33.18	2.33	19.53	0.15
Industrials	6.81	4.03	2.78	26.34	0.84	7.04	0.13
Information Technology	15.63	12.22	3.41	35.12	3.42	28.75	0.15
Materials	1.11	1.24	-0.13	33.84	0.17	1.41	0.13
Others	47.78	54.00	-6.22	20.09	3.63	30.45	0.01
Real Estate	1.16	1.66	-0.50	25.44	0.03	0.22	0.06
Utilities	3.41	1.36	2.05	9.95	-0.00	-0.03	0.02



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BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Public
 BENCHMARK: Public
 POSITIONS: 3,250
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 2,275,491,259
 ACCEPTED: 3,243

Total Plan Summary

Risk Summary

Statistic	Value
Total Risk	5.03
Benchmark Risk	5.85
Active Risk	1.32
Portfolio Beta	0.84
Cont. to Eff. Duration	6.27
Convexity	0.67
Yield to Worst (%)	1.68
OAS to Swap (bp)	155.33

Asset Class Contribution to Risk

Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total	2,275,491,259	100.00	5.03	5.03	100.00
Alternative Credit	511,996,947	22.50	12.38	1.75	34.83
Fixed Income	1,763,494,312	77.50	5.07	3.28	65.17

Asset Class Allocation

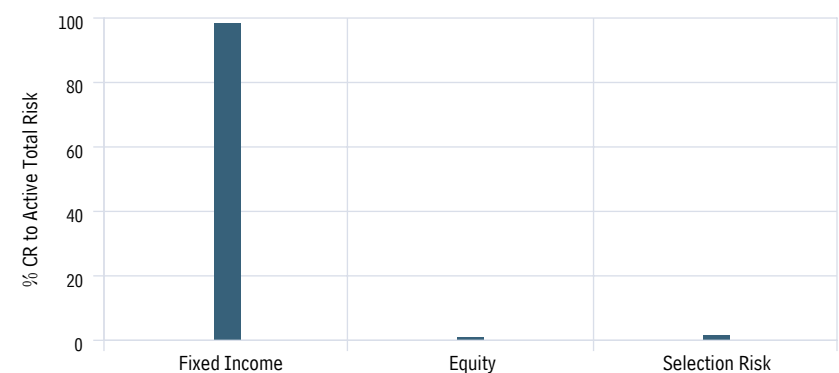


Risk Factor Breakdown

Risk Decomposition

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	5.03	100.00	1.00	1.32	100.00	1.00
Local Market Risk	5.03	100.00	1.00	1.32	100.00	1.00
Common Factor Risk	5.02	99.80	1.00	1.30	98.39	0.99
Equity	0.00	0.09	0.31	0.01	0.40	0.39
Fixed Income	5.01	99.72	1.00	1.30	97.99	0.99
Nominal Rates	2.12	42.15	0.54	1.07	80.92	0.97
Real Rates	0.71	14.08	0.83	0.13	9.67	0.76
Credit	2.19	43.49	0.53	0.10	7.40	0.40
Selection Risk	0.01	0.20	0.04	0.02	1.61	0.13

Active Risk from Risk Factors



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BarraOne Fixed Income Summary

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 BENCHMARK: Public
 POSITIONS: 3,250
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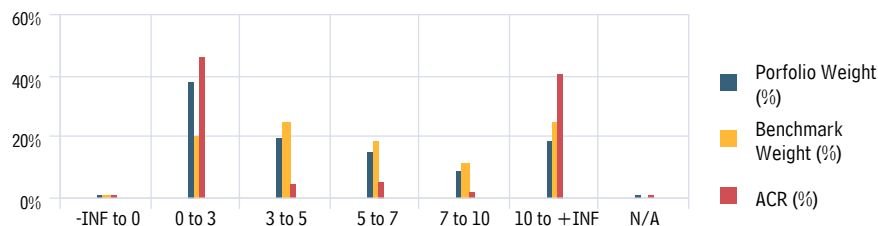
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 ACCEPTED: 3,243

Portfolio by Factor Breakdowns

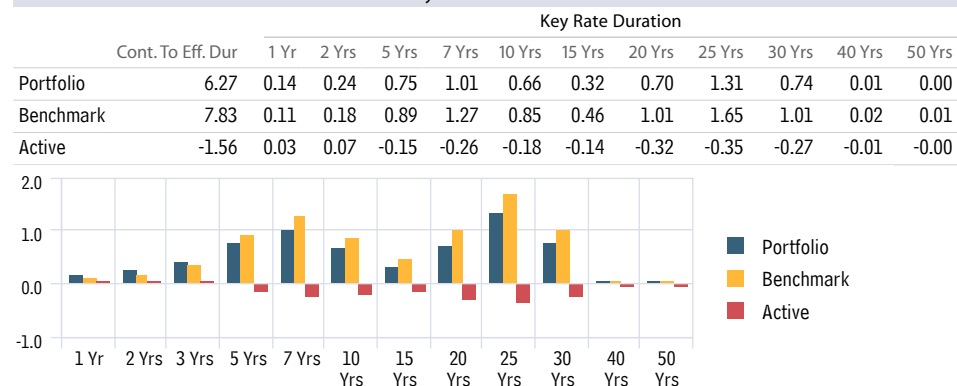
Spread Factor	Volatility	Top 10 Spread Factor				Correlation	Contribution (Residual)			
		Exposure (Residual)					Active Port	to TR	to AR	to AR%
		Portfolio	Benchmark	Active	MCAR					
US Materials B	5.21	0.04	0.02	0.01	0.02	0.45	0.09	0.03	2.48	
US Consumer Discretionary CCC	7.27	0.03	0.02	0.01	0.03	0.42	0.09	0.03	2.39	
US Consumer Discretionary B	4.04	0.09	0.08	0.02	0.02	0.44	0.18	0.03	2.19	
US Energy CCC	18.04	0.01	0.01	0.00	0.07	0.40	0.08	0.03	2.01	
US Industrials B	3.65	0.04	0.03	0.01	0.02	0.49	0.07	0.02	1.32	
US Materials CCC	6.37	0.01	0.01	0.00	0.03	0.46	0.02	0.01	1.00	
US Telecom BB	2.63	0.05	0.04	0.01	0.01	0.35	0.07	0.01	0.87	
US Financials BBB	1.68	0.12	0.10	0.02	0.00	0.28	0.12	0.01	0.75	
US Transportation B-BB	6.18	0.01	0.01	0.00	0.02	0.38	0.03	0.01	0.72	
US Corporate Non-Financials CC	8.20	0.01	0.00	0.00	0.04	0.43	0.03	0.01	0.67	

Term Structure	Volatility	Top 10 Term Structure				Correlation	Contribution (Residual)			
		Exposure (Residual)					Active Port	to TR	to AR	to AR%
		Portfolio	Benchmark	Active	MCAR					
US Shift	0.72	5.18	6.52	-1.34	-0.01	-0.95	1.79	0.91	68.55	
US Twist	0.24	2.26	3.48	-1.22	-0.00	-0.59	0.30	0.17	13.13	
US Inflation-protected	0.83	1.08	1.30	-0.23	-0.00	-0.51	0.73	0.10	7.27	
US Inflation-protected	0.51	0.35	0.51	-0.16	-0.00	-0.42	-0.04	0.03	2.58	
US Implied Volatility	26.22	-0.00	-0.00	0.00	0.01	0.05	0.03	0.00	0.13	
US Municipal Butterfly	0.22	-0.00	-0.00	-0.00	0.00	0.06	-0.00	-0.00	-0.00	
US Municipal Twist	0.38	0.01	0.00	0.01	-0.00	-0.45	0.00	-0.00	-0.09	
US Inflation-protected	0.19	-0.27	-0.24	-0.03	0.00	0.37	0.01	-0.00	-0.17	
US Municipal Shift	1.32	0.01	0.01	0.01	-0.01	-0.43	0.01	-0.00	-0.27	
US Butterfly	0.13	0.20	0.36	-0.16	0.00	0.34	-0.01	-0.01	-0.54	

%CR to Active Risk by Duration Buckets



Key Rate Duration



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 MARKET VALUE: 2,275,491,259
 ACCEPTED: 3,243

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	5.03	1.32	100.00	0.01
United States	93.77	92.80	0.97	4.97	1.29	97.45	-0.03
Canada	1.18	1.38	-0.20	11.00	-0.00	-0.28	0.01
United Kingdom	1.08	0.87	0.21	9.41	0.01	0.50	-0.00
Ireland	0.80	0.19	0.61	4.52	0.03	2.11	0.01
Jersey	0.66	0.01	0.65	0.00	0.03	1.97	0.00
Luxembourg	0.45	0.42	0.02	14.01	0.00	0.36	0.03
Netherlands	0.32	0.46	-0.14	7.73	-0.00	-0.33	0.00
Switzerland	0.18	0.13	0.05	17.71	0.00	0.30	0.02
France	0.17	0.21	-0.04	12.04	0.00	0.21	0.02
Mexico	0.15	0.23	-0.08	19.31	-0.00	-0.30	-0.01
World	0.15	0.53	-0.38	5.72	-0.00	-0.06	-0.04
Japan	0.13	0.32	-0.20	5.99	-0.00	-0.30	-0.02
Germany	0.12	0.29	-0.17	12.84	-0.00	-0.16	-0.00
Italy	0.10	0.15	-0.05	17.47	-0.00	-0.14	0.02
Australia	0.08	0.14	-0.07	16.16	-0.00	-0.03	0.01
Bermuda	0.07	0.04	0.03	18.47	0.00	0.06	0.01
Caymans	0.07	0.06	0.01	14.31	0.00	0.08	0.04
Belgium	0.06	0.15	-0.09	19.84	0.00	0.07	-0.05
United Arab Emirates	0.05	0.06	-0.01	8.05	0.00	0.09	-0.02
Sweden	0.05	0.07	-0.03	2.59	-0.00	-0.09	-0.00
Israel	0.05	0.04	0.01	36.33	0.00	0.10	-0.02
Panama	0.04	0.05	-0.00	11.96	0.00	0.02	-0.03
Colombia	0.04	0.08	-0.03	14.42	-0.00	-0.07	-0.01
Spain	0.04	0.07	-0.02	8.73	-0.00	-0.05	-0.01
Bahamas	0.04	0.00	0.04	6.74	0.00	0.10	-0.00
Hong Kong	0.03	0.03	-0.00	10.17	-0.00	-0.01	-0.02
Venezuela	0.02	0.00	0.02	22.08	0.00	0.11	0.02
Indonesia	0.02	0.12	-0.10	22.46	-0.00	-0.11	-0.04
Macao	0.02	0.05	-0.03	15.41	-0.00	-0.11	0.01
Austria	0.02	0.02	-0.00	12.37	0.00	0.02	0.00



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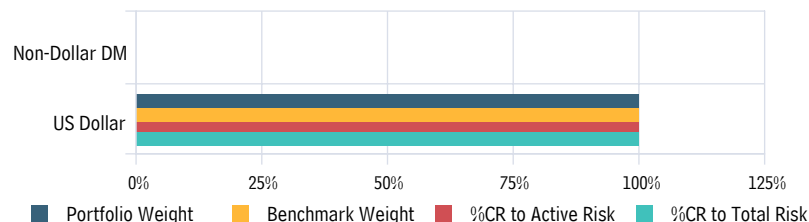
BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Public
 BENCHMARK: Public
 POSITIONS: 3,250
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 2,275,491,259
 ACCEPTED: 3,243

Portfolio Allocation by Currency

Exposure by Market



Developed Market Currency

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	2,275,491,258.91	100.00	100.00

Emerging Market Currency

Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
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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	5.03	5.03	100.00	1.32	100.00
US Dollar	100.00	100.00	-0.00	5.03	5.03	100.00	1.32	100.00



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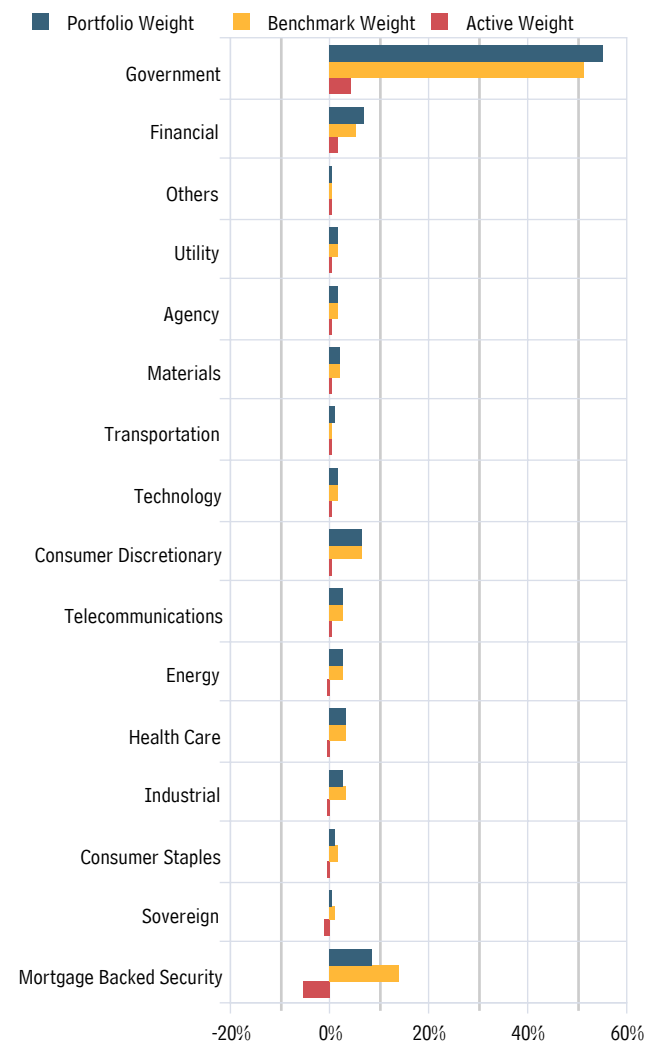
BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Public
 BENCHMARK: Public
 POSITIONS: 3,250
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 2,275,491,259
 ACCEPTED: 3,243

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	6.27	5.03	1.32	100.00	0.01
Government	55.26	51.14	4.12	4.26	5.53	1.13	85.59	-0.06
Mortgage Backed Security	8.85	14.18	-5.33	0.28	3.30	-0.08	-5.98	-0.02
Financial	7.09	5.67	1.42	0.25	7.83	0.09	6.97	-0.00
Consumer Discretionary	6.45	6.41	0.04	0.27	12.71	0.05	3.87	0.02
Health Care	2.97	3.19	-0.21	0.16	9.70	0.00	0.31	-0.01
Energy	2.77	2.82	-0.05	0.15	27.20	0.03	2.51	0.04
Industrial	2.74	3.08	-0.35	0.10	10.90	0.00	0.35	0.02
Telecommunications	2.51	2.47	0.04	0.10	10.36	0.01	1.07	0.01
Materials	2.27	1.98	0.29	0.09	14.21	0.05	3.58	0.03
Technology	1.83	1.78	0.05	0.11	9.77	0.02	1.42	-0.02
Utility	1.75	1.45	0.30	0.12	8.71	0.02	1.53	-0.03
Agency	1.69	1.39	0.30	0.16	7.63	-0.04	-3.18	-0.06
Consumer Staples	1.33	1.82	-0.49	0.10	12.87	-0.01	-0.76	-0.02
Transportation	0.84	0.64	0.21	0.05	15.73	0.02	1.68	0.00
Others	0.61	0.00	0.60	0.01	0.64	0.02	1.66	-0.00
Asset Backed Security	0.44	0.09	0.35	0.02	5.71	0.01	0.72	-0.02
Commercial Mortgage Backed	0.22	0.08	0.14	0.01	6.79	0.00	0.20	-0.02
Supranational	0.15	0.53	-0.38	0.01	5.72	-0.00	-0.06	-0.04
Sovereign	0.13	1.04	-0.91	0.01	13.05	-0.01	-0.91	-0.03
Local/Provincial	0.10	0.23	-0.13	0.01	15.70	-0.01	-0.54	-0.05



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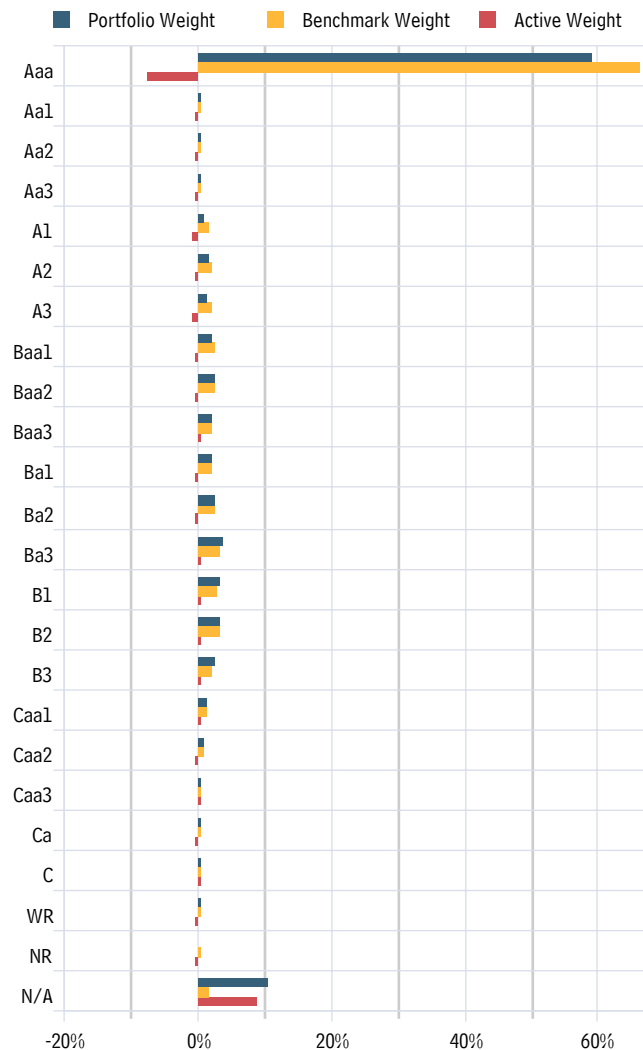
BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Public
 BENCHMARK: Public
 POSITIONS: 3,250
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 2,275,491,259
 ACCEPTED: 3,243

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	6.27	6.57	5.03	1.32	100.00
Aaa	58.84	66.42	-7.58	4.53	7.99	5.44	0.80	60.18
Aa1	0.30	0.32	-0.02	0.03	8.56	8.90	-0.00	-0.08
Aa2	0.20	0.60	-0.40	0.02	8.13	7.83	0.00	0.06
Aa3	0.32	0.54	-0.22	0.03	10.10	10.56	-0.00	-0.33
A1	0.68	1.44	-0.76	0.05	7.22	7.31	-0.00	-0.05
A2	1.52	1.87	-0.35	0.11	7.38	7.78	0.00	0.33
A3	1.30	2.10	-0.80	0.11	8.32	9.44	-0.00	-0.19
Baa1	2.04	2.26	-0.23	0.16	8.11	10.85	0.01	0.92
Baa2	2.42	2.61	-0.19	0.18	7.94	10.48	0.01	0.77
Baa3	2.03	1.83	0.20	0.16	8.05	13.83	-0.00	-0.20
Ba1	1.82	1.96	-0.15	0.08	5.64	15.47	0.00	0.14
Ba2	2.53	2.59	-0.06	0.10	4.42	13.08	-0.01	-0.83
Ba3	3.65	3.21	0.44	0.11	3.51	10.60	0.04	2.70
B1	3.25	2.75	0.50	0.11	3.80	13.53	0.03	2.54
B2	3.40	3.35	0.05	0.09	3.25	12.46	0.02	1.21
B3	2.46	1.90	0.56	0.07	3.18	14.31	0.06	4.36
Caa1	1.33	1.03	0.30	0.04	3.30	26.77	0.07	5.14
Caa2	0.80	0.82	-0.01	0.02	2.94	23.28	0.00	0.29
Caa3	0.30	0.26	0.04	0.01	2.25	17.38	0.00	0.22
Ca	0.08	0.10	-0.02	0.00	2.89	24.10	-0.00	-0.04
C	0.02	0.02	0.00	0.00	1.23	14.27	0.00	0.00
WR	0.31	0.34	-0.02	0.01	1.96	8.49	-0.00	-0.08
NR	0.00	0.03	-0.03	0.00	0.00	0.00	0.00	0.03
Not Rated	10.42	1.66	8.76	0.26	2.59	1.70	0.30	22.91



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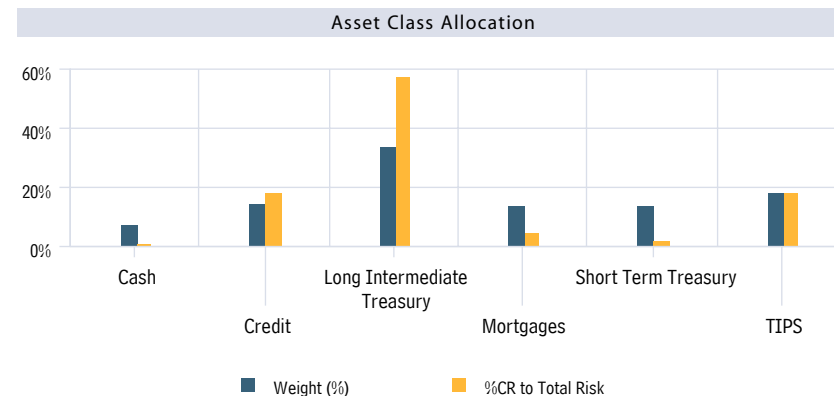
BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Fixed Income
 BENCHMARK: Public
 POSITIONS: 1,699
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 1,763,494,312
 ACCEPTED: 1,696

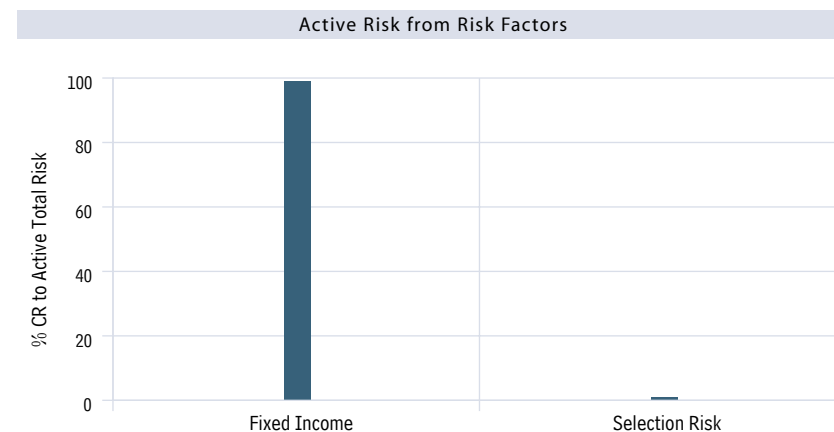
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	5.07	Total	1,763,494,312	100.00	5.07	5.07	100.00
Benchmark Risk	5.85	Cash	123,149,607	6.98	0.09	0.00	0.05
Active Risk	2.29	Credit	256,387,317	14.54	9.87	0.93	18.41
Portfolio Beta	0.80	Long Intermediate Treasury	585,722,721	33.21	9.56	2.89	56.91
Cont. to Eff. Duration	7.23	Mortgages	236,338,980	13.40	2.99	0.21	4.13
Convexity	0.90	Short Term Treasury	237,402,379	13.46	1.24	0.11	2.17
Yield to Worst (%)	1.06	TIPS	318,952,600	18.09	6.05	0.92	18.18
OAS to Swap (bp)	82.68						



Risk Factor Breakdown

Risk Source	Risk Decomposition			Risk Decomposition		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	5.07	100.00	1.00	2.29	100.00	1.00
Local Market Risk	5.07	100.00	1.00	2.29	100.00	1.00
Common Factor Risk	5.07	99.93	1.00	2.28	99.44	1.00
Fixed Income	5.07	99.94	1.00	2.28	99.55	1.00
Nominal Rates	4.07	80.36	0.91	-0.13	-5.87	-0.24
Real Rates	0.92	18.18	0.84	-0.05	-1.99	-0.51
Credit	0.07	1.40	0.05	2.46	107.41	0.98
Selection Risk	0.00	0.07	0.03	0.01	0.56	0.07



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BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Fixed Income
 BENCHMARK: Public
 POSITIONS: 1,699
 MODEL: BIM303L

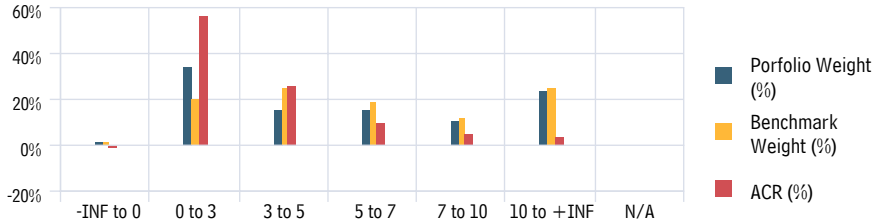
CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 1,763,494,312
 ACCEPTED: 1,696

Portfolio by Factor Breakdowns

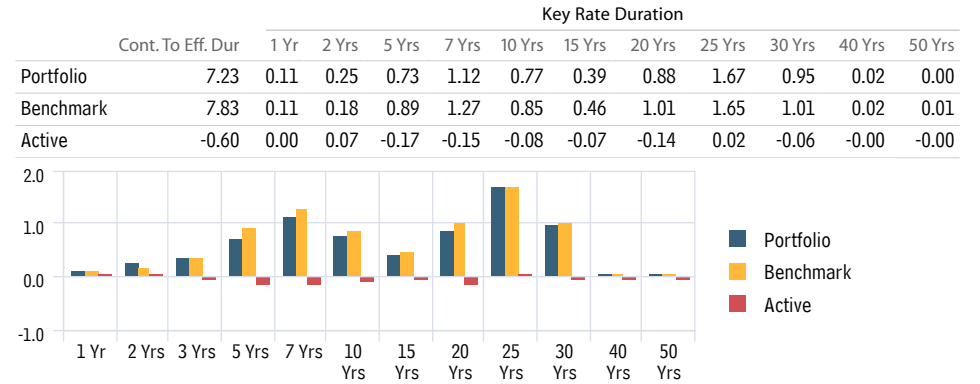
Spread Factor	Volatility	Top 10 Spread Factor									
		Exposure (Residual)				Correlation		Contribution (Residual)			
		Portfolio	Benchmark	Active	MCAR	Active Port	to TR	to AR	to AR%		
US Consumer Discretionary B	4.04	0.00	0.08	-0.08	-0.04	-0.95	-0.00	0.29	12.75		
US Energy BB	4.62	0.00	0.06	-0.06	-0.04	-0.94	0.00	0.25	10.84		
US Energy B	11.45	0.00	0.02	-0.02	-0.11	-0.92	0.00	0.18	8.03		
US Industrials B	3.65	0.00	0.03	-0.03	-0.03	-0.93	0.00	0.11	4.91		
US Materials B	5.21	0.00	0.02	-0.02	-0.05	-0.94	0.00	0.11	4.87		
US Consumer Staples B-BB	2.55	0.00	0.05	-0.04	-0.02	-0.93	-0.00	0.10	4.56		
US Financials B	4.73	0.00	0.03	-0.03	-0.04	-0.87	0.00	0.10	4.50		
US Consumer Discretionary CCC	7.27	0.00	0.02	-0.02	-0.07	-0.90	0.00	0.10	4.45		
US Energy CCC	18.04	0.00	0.01	-0.01	-0.16	-0.88	0.00	0.10	4.20		
US Consumer Discretionary BB	2.83	0.00	0.04	-0.03	-0.03	-0.96	0.00	0.09	4.09		

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 Twist	0.24	3.14	3.48	-0.34	-0.00	-0.19	0.47	0.02	0.70		
US Implied Volatility	26.22	-0.00	-0.00	0.00	0.11	0.41	0.01	0.02	0.70		
US Inflation-protected	0.19	-0.35	-0.24	-0.11	-0.00	-0.08	0.02	0.00	0.07		
US Municipal Twist	0.38	0.01	0.00	0.01	0.00	0.30	0.00	0.00	0.05		
US Municipal Butterfly	0.22	-0.00	-0.00	-0.00	-0.00	-0.13	-0.00	0.00	0.00		
US Butterfly	0.13	0.75	0.36	0.39	-0.00	-0.05	-0.04	-0.00	-0.11		
US Municipal Shift	1.32	0.01	0.01	0.01	-0.01	-0.49	0.01	-0.01	-0.27		
US Inflation-protected	0.51	0.46	0.51	-0.06	0.00	0.54	0.04	-0.02	-0.68		
US Inflation-protected	0.83	1.39	1.30	0.09	-0.00	-0.44	0.86	-0.03	-1.38		
US Shift	0.72	5.82	6.52	-0.70	0.00	0.32	3.62	-0.16	-6.94		

%CR to Active Risk by Duration Buckets



Key Rate Duration



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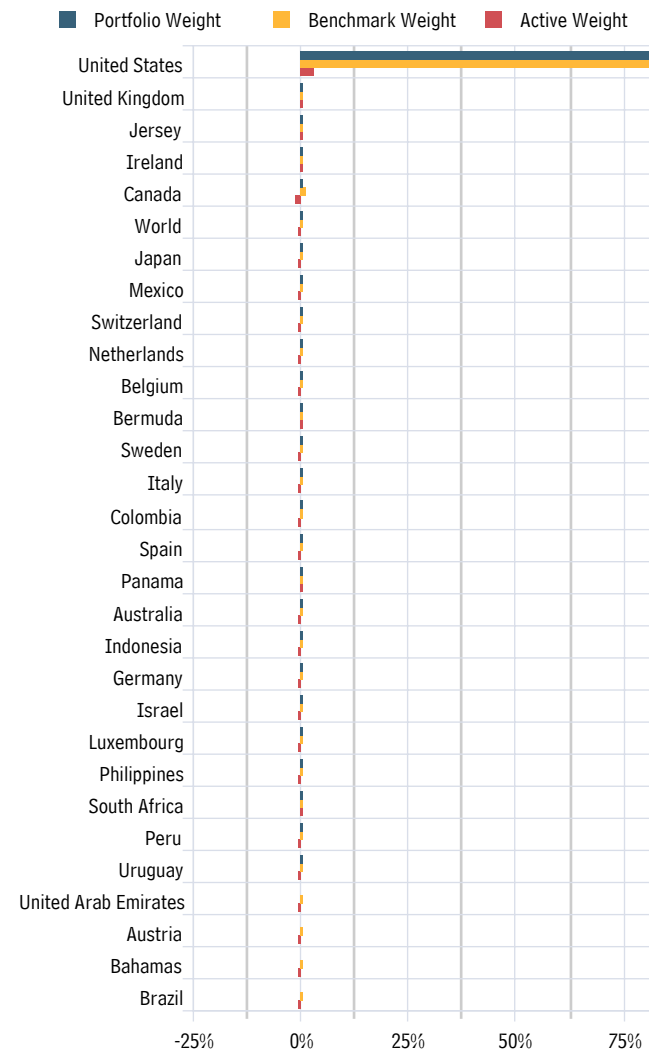
BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Fixed Income
 BENCHMARK: Public
 POSITIONS: 1,699
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 1,763,494,312
 ACCEPTED: 1,696

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	5.07	2.29	100.00	0.02
United States	95.73	92.80	2.93	5.16	1.94	84.91	-0.02
United Kingdom	0.91	0.87	0.04	8.84	0.02	1.02	-0.08
Jersey	0.85	0.01	0.84	0.00	0.03	1.11	-0.00
Ireland	0.80	0.19	0.61	0.69	0.03	1.49	-0.02
Canada	0.37	1.38	-1.01	8.97	0.10	4.20	-0.10
World	0.19	0.53	-0.34	5.72	-0.01	-0.33	-0.01
Japan	0.16	0.32	-0.16	5.99	0.00	0.04	-0.04
Mexico	0.16	0.23	-0.07	19.09	0.01	0.41	-0.15
Switzerland	0.13	0.13	-0.00	6.20	0.02	0.78	-0.12
Netherlands	0.10	0.46	-0.37	8.76	0.02	0.86	-0.08
Belgium	0.08	0.15	-0.07	19.84	0.01	0.25	-0.11
Bermuda	0.07	0.04	0.03	13.35	0.00	0.09	-0.12
Sweden	0.06	0.07	-0.01	2.59	0.00	0.00	-0.02
Italy	0.06	0.15	-0.09	9.11	0.01	0.65	-0.14
Colombia	0.06	0.08	-0.02	14.42	0.00	0.19	-0.12
Spain	0.06	0.07	-0.01	8.73	0.00	0.14	-0.08
Panama	0.05	0.05	0.01	12.81	0.00	0.01	-0.07
Australia	0.04	0.14	-0.10	1.05	0.01	0.33	-0.06
Indonesia	0.03	0.12	-0.09	22.46	0.00	0.07	-0.07
Germany	0.03	0.29	-0.26	1.92	0.00	0.03	-0.03
Israel	0.02	0.04	-0.01	43.19	-0.00	-0.12	-0.14
Luxembourg	0.02	0.42	-0.41	8.79	0.04	1.66	-0.12
Philippines	0.01	0.06	-0.05	22.79	0.00	0.03	-0.06
South Africa	0.01	0.00	0.01	15.32	-0.00	-0.03	-0.12
Peru	0.01	0.05	-0.04	27.82	0.00	0.18	-0.15
Uruguay	0.01	0.03	-0.02	28.60	0.00	0.08	-0.12
United Arab Emirates	0.00	0.06	-0.06	0.00	0.00	0.11	-0.07
Austria	0.00	0.02	-0.02	0.00	-0.00	-0.02	-0.01
Bahamas	0.00	0.00	-0.00	0.00	0.00	0.00	-0.12
Brazil	0.00	0.05	-0.05	0.00	0.01	0.26	-0.15



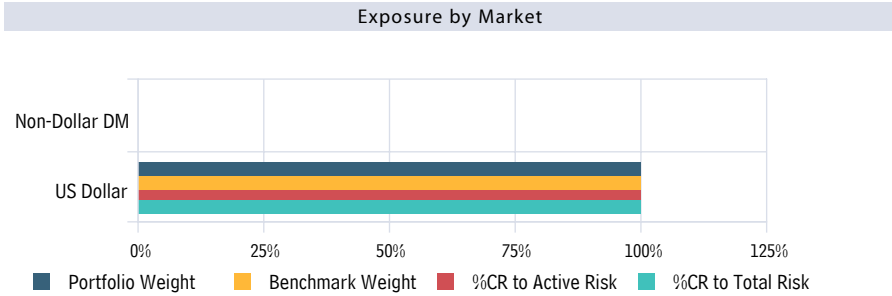
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BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Fixed Income
 BENCHMARK: Public
 POSITIONS: 1,699
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 1,763,494,312
 ACCEPTED: 1,696

Portfolio Allocation by Currency



Developed Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	1,763,494,312.09	100.00	100.00

Emerging Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)

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							
Total	100.00	100.00		-0.00	5.07	5.07	100.00	2.29	100.00
US Dollar	100.00	100.00		-0.00	5.07	5.07	100.00	2.29	100.00



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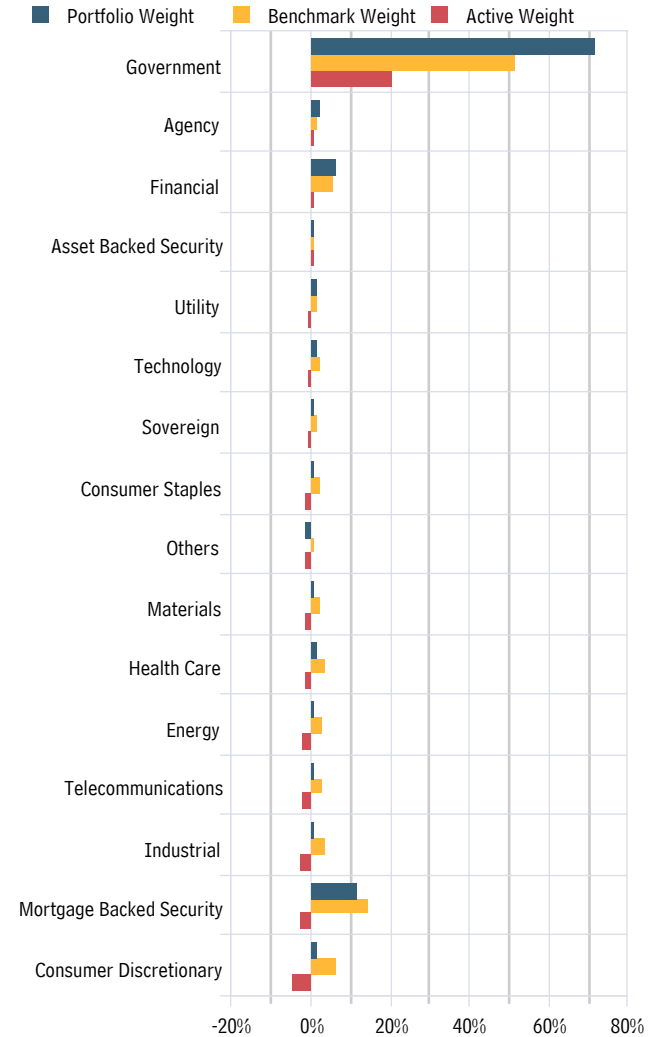
BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Fixed Income
 BENCHMARK: Public
 POSITIONS: 1,699
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 1,763,494,312
 ACCEPTED: 1,696

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	7.23	5.07	2.29	100.00	0.02
Government	71.30	51.14	20.16	5.49	5.53	0.56	24.57	0.01
Mortgage Backed Security	11.42	14.18	-2.76	0.36	3.30	-0.08	-3.40	-0.00
Financial	6.26	5.67	0.59	0.26	6.10	0.18	7.91	-0.06
Agency	2.18	1.39	0.79	0.20	7.63	0.05	1.98	0.01
Health Care	1.50	3.19	-1.69	0.14	10.33	0.12	5.08	-0.08
Utility	1.42	1.45	-0.02	0.13	9.23	0.03	1.32	-0.06
Consumer Discretionary	1.35	6.41	-5.06	0.13	13.30	0.38	16.71	-0.11
Technology	1.27	1.78	-0.51	0.11	10.67	0.02	1.03	-0.07
Energy	0.86	2.82	-1.96	0.07	18.68	0.47	20.35	-0.22
Consumer Staples	0.78	1.82	-1.04	0.08	13.04	0.07	2.87	-0.09
Industrial	0.66	3.08	-2.42	0.04	8.96	0.18	7.91	-0.09
Asset Backed Security	0.57	0.09	0.48	0.02	5.71	0.02	0.92	0.01
Telecommunications	0.42	2.47	-2.05	0.05	15.63	0.13	5.73	-0.10
Transportation	0.42	0.64	-0.22	0.05	16.86	0.02	0.73	-0.12
Materials	0.39	1.98	-1.59	0.04	12.86	0.15	6.69	-0.12
Commercial Mortgage Backed	0.28	0.08	0.20	0.01	6.79	0.01	0.43	0.02
Supranational	0.19	0.53	-0.34	0.01	5.72	-0.01	-0.33	-0.01
Sovereign	0.17	1.04	-0.87	0.02	13.05	0.04	1.78	-0.08
Local/Provincial	0.11	0.23	-0.12	0.02	18.42	-0.01	-0.31	-0.04
Others	-1.54	0.00	-1.55	0.00	0.06	-0.05	-1.98	0.00



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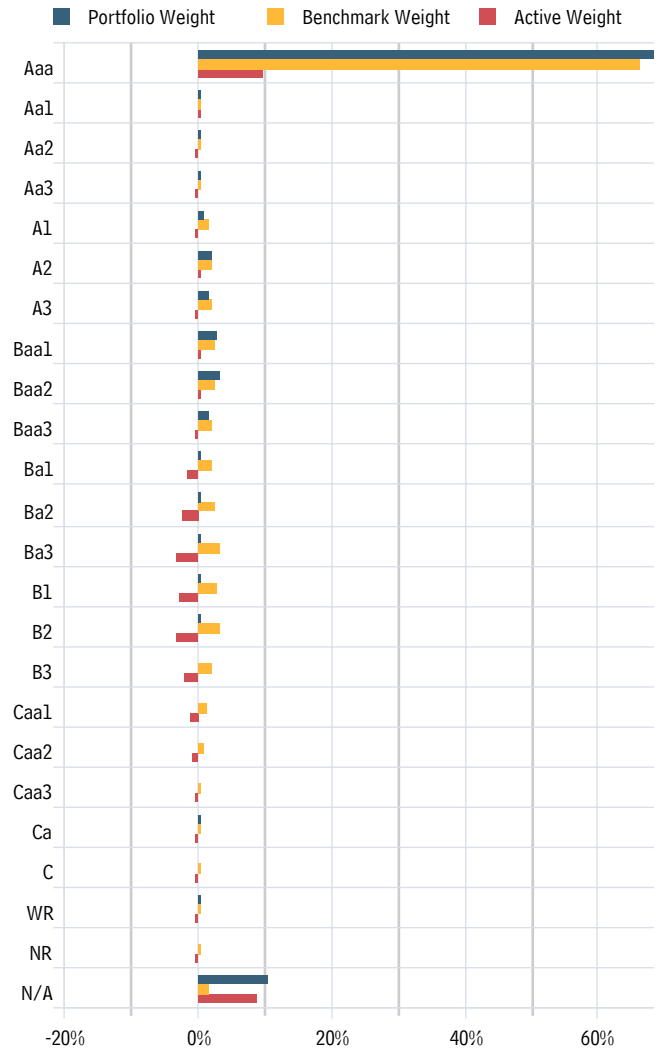
BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Fixed Income
 BENCHMARK: Public
 POSITIONS: 1,699
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 1,763,494,312
 ACCEPTED: 1,696

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	7.23	7.47	5.07	2.29	100.00
Aaa	75.93	66.42	9.51	5.85	7.99	5.44	0.24	10.68
Aa1	0.38	0.32	0.07	0.03	8.56	8.90	-0.00	-0.09
Aa2	0.25	0.60	-0.35	0.02	8.13	7.83	0.01	0.23
Aa3	0.42	0.54	-0.13	0.04	10.10	10.56	-0.00	-0.03
A1	0.87	1.44	-0.57	0.06	7.22	7.31	0.02	0.76
A2	1.96	1.87	0.09	0.14	7.38	7.78	0.01	0.46
A3	1.68	2.10	-0.43	0.14	8.32	9.44	0.02	0.95
Baa1	2.63	2.26	0.36	0.21	8.11	10.85	0.00	0.13
Baa2	3.02	2.61	0.41	0.23	7.91	10.42	-0.02	-0.67
Baa3	1.68	1.83	-0.14	0.15	8.77	14.19	-0.01	-0.39
Ba1	0.49	1.96	-1.47	0.03	8.10	19.25	0.13	5.77
Ba2	0.21	2.59	-2.38	0.01	6.30	17.63	0.24	10.34
Ba3	0.00	3.21	-3.21	-0.00	2.50	9.39	0.22	9.75
B1	0.01	2.75	-2.74	0.00	2.36	13.61	0.29	12.82
B2	0.01	3.35	-3.33	-0.00	5.83	10.64	0.27	11.96
B3	0.00	1.90	-1.90	0.00	0.00	0.00	0.19	8.39
Caa1	0.00	1.03	-1.03	0.00	0.00	0.00	0.16	7.09
Caa2	0.00	0.82	-0.82	0.00	0.00	0.00	0.14	6.07
Caa3	0.00	0.26	-0.26	0.00	0.00	0.00	0.03	1.47
Ca	0.00	0.10	-0.10	0.00	3.93	23.22	0.01	0.52
C	0.00	0.02	-0.02	0.00	0.00	0.00	0.00	0.10
WR	0.02	0.34	-0.32	0.00	3.81	11.45	0.00	0.13
NR	0.00	0.03	-0.03	0.00	0.00	0.00	-0.00	-0.04
Not Rated	10.45	1.66	8.79	0.31	2.94	2.18	0.31	13.61



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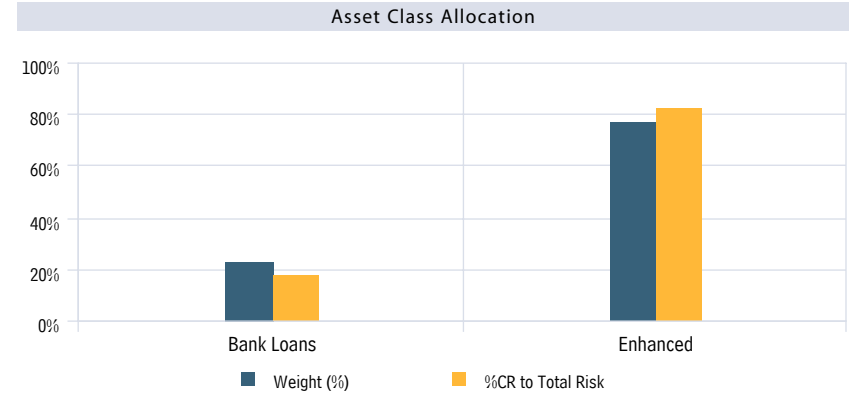
BarraOne Fixed Income Summary

COMPANY: NYCRC - BERS
 PORTFOLIO: Alternative Credit
 BENCHMARK: Alternative Credit
 POSITIONS: 1,551
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 511,996,947
 ACCEPTED: 1,547

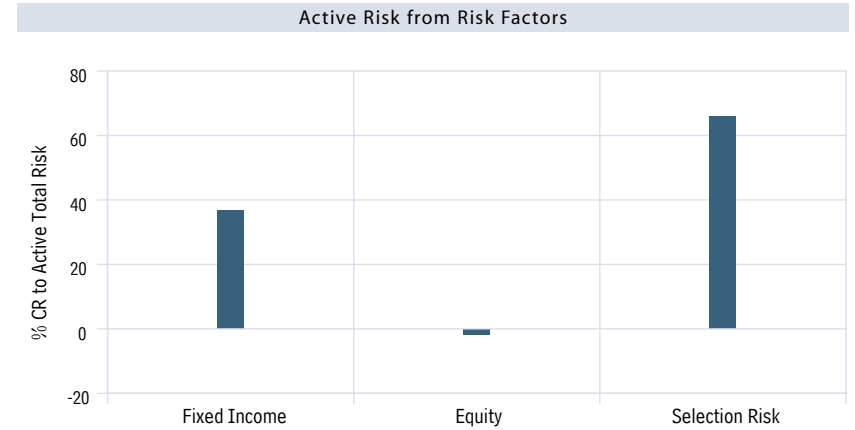
Total Plan Summary

Risk Summary		Asset Class Contribution to Risk					
Statistic	Value	Asset Class	Mkt Value	Weight (%)	Total Risk	Risk Contribution	%CR to TR
Total Risk	12.38	Total	511,996,947	100.00	12.38	12.38	100.00
Benchmark Risk	12.70	Bank Loans	119,263,878	23.29	9.86	2.25	18.21
Active Risk	0.74	Enhanced	392,733,069	76.71	13.22	10.13	81.79
Portfolio Beta	0.97						
Cont. to Eff. Duration	2.96						
Convexity	-0.16						
Yield to Worst (%)	6.67						
OAS to Swap (bp)	591.64						



Risk Factor Breakdown

Risk Source	Portfolio			Active		
	Risk Contribution	% Risk	Correlation	Risk Contribution	% Risk	Correlation
Total Risk	12.38	100.00	1.00	0.74	100.00	1.00
Local Market Risk	12.38	100.00	1.00	0.74	100.00	1.00
Common Factor Risk	12.33	99.53	1.00	0.25	34.37	0.59
Equity	0.04	0.29	0.73	-0.02	-2.07	-0.32
Style	0.02	0.13	0.67	-0.01	-0.94	-0.29
Industry	0.02	0.16	0.71	-0.01	-1.13	-0.31
Fixed Income	12.29	99.24	1.00	0.27	36.45	0.58
Nominal Rates	-0.75	-6.07	-0.35	0.00	0.42	0.09
Credit	13.04	105.31	0.99	0.26	36.03	0.58
Selection Risk	0.06	0.47	0.07	0.48	65.63	0.81



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BarraOne Fixed Income Summary

COMPANY: NYCRS - BERS
 PORTFOLIO: Alternative Credit
 BENCHMARK: Alternative Credit
 POSITIONS: 1,551
 MODEL: BIM303L

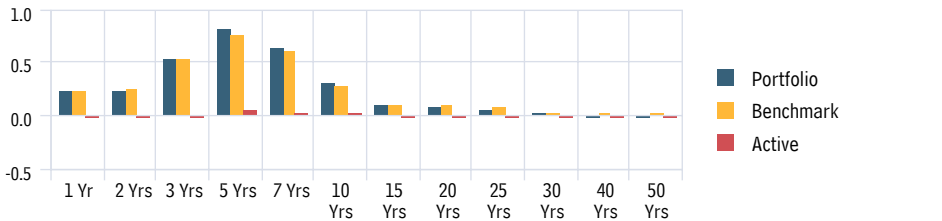
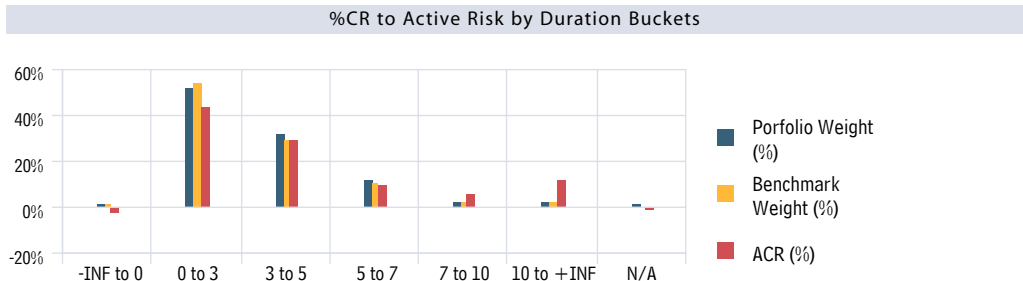
CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 511,996,947
 ACCEPTED: 1,547

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 Energy B	11.45	0.07	0.09	-0.02	-0.05	-0.42	0.78	0.09	12.42	
US Materials BB	2.76	0.09	0.15	-0.06	-0.01	-0.47	0.24	0.08	10.38	
US Consumer Discretionary BB	2.83	0.15	0.21	-0.05	-0.01	-0.49	0.42	0.07	10.01	
US Industrials BB	3.00	0.09	0.13	-0.05	-0.01	-0.49	0.25	0.07	9.36	
US Consumer Staples B-BB	2.55	0.18	0.22	-0.04	-0.01	-0.49	0.44	0.05	6.54	
US Consumer Discretionary Cons	3.67	0.07	0.10	-0.02	-0.02	-0.48	0.26	0.04	5.85	
US Energy BB	4.62	0.27	0.29	-0.02	-0.02	-0.46	1.20	0.04	5.55	
US CCC	8.50	0.02	0.03	-0.01	-0.03	-0.37	0.13	0.04	5.50	
US Health Care CCC	5.87	0.04	0.05	-0.01	-0.03	-0.46	0.22	0.03	4.69	
US Industrials CCC	7.48	0.04	0.05	-0.01	-0.03	-0.37	0.27	0.03	4.51	

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	2.97	2.95	0.02	0.00	0.21	-0.75	0.00	0.43	
US Butterfly	0.13	-1.68	-1.54	-0.15	-0.00	-0.11	-0.01	0.00	0.29	
US Twist	0.24	-0.78	-0.78	-0.00	-0.00	-0.09	-0.03	0.00	0.01	
US Implied Volatility	26.22	-0.00	-0.00	-0.00	0.05	0.17	0.04	-0.00	-0.31	

Key Rate Duration	Key Rate Duration											
	Cont. To Eff. Dur	1 Yr	2 Yrs	5 Yrs	7 Yrs	10 Yrs	15 Yrs	20 Yrs	25 Yrs	30 Yrs	40 Yrs	50 Yrs
	Portfolio	2.96	0.24	0.22	0.81	0.63	0.30	0.09	0.07	0.06	0.02	-0.00
Benchmark	2.94	0.24	0.24	0.75	0.60	0.28	0.11	0.09	0.07	0.02	0.00	0.00
Active	0.02	-0.00	-0.03	0.06	0.04	0.01	-0.01	-0.02	-0.01	-0.00	-0.00	-0.01



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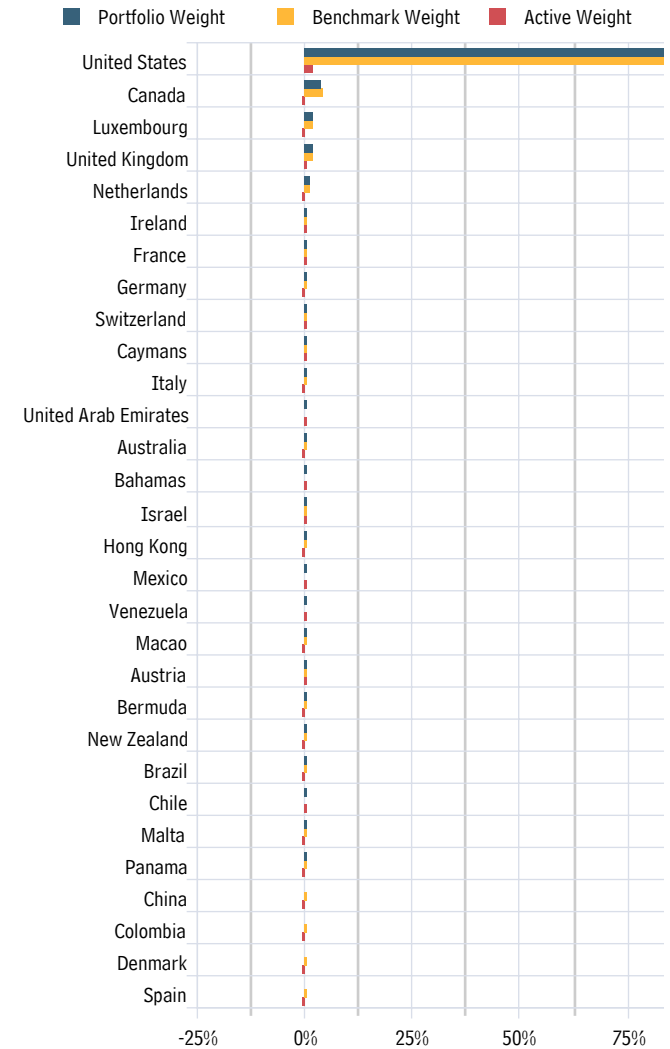
BarraOne Fixed Income Summary

COMPANY: NYCRC - BERS
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 BENCHMARK: Alternative Credit
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 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 511,996,947
 ACCEPTED: 1,547

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	12.38	0.74	100.00	0.01
United States	86.99	85.04	1.96	12.40	0.68	92.25	-0.05
Canada	3.99	4.53	-0.54	12.20	0.06	7.68	-0.05
Luxembourg	1.92	2.16	-0.24	14.32	0.01	1.06	-0.05
United Kingdom	1.68	1.61	0.07	13.12	0.01	1.74	-0.06
Netherlands	1.08	1.50	-0.42	8.26	0.01	1.14	-0.04
Ireland	0.82	0.65	0.17	18.40	-0.01	-0.77	-0.06
France	0.74	0.69	0.05	12.04	-0.01	-0.81	-0.05
Germany	0.44	0.46	-0.02	15.31	-0.00	-0.48	-0.05
Switzerland	0.35	0.28	0.07	34.85	0.00	0.23	-0.11
Caymans	0.30	0.27	0.02	14.31	0.00	0.19	-0.05
Italy	0.26	0.66	-0.40	25.74	0.01	0.74	-0.08
United Arab Emirates	0.22	0.00	0.22	8.05	0.01	1.32	-0.01
Australia	0.20	0.40	-0.20	28.09	-0.01	-0.75	-0.05
Bahamas	0.17	0.00	0.17	6.74	0.01	0.86	-0.02
Israel	0.12	0.02	0.10	31.71	-0.00	-0.21	-0.06
Hong Kong	0.12	0.15	-0.03	10.17	-0.00	-0.27	0.00
Mexico	0.11	0.00	0.11	25.47	-0.00	-0.44	-0.09
Venezuela	0.11	0.00	0.11	22.08	0.00	0.29	-0.04
Macao	0.08	0.20	-0.12	15.41	0.00	0.22	-0.07
Austria	0.08	0.01	0.07	12.37	0.00	0.20	-0.04
Bermuda	0.06	0.08	-0.01	52.12	-0.00	-0.02	-0.14
New Zealand	0.06	0.14	-0.08	6.07	-0.00	-0.32	-0.03
Brazil	0.04	0.12	-0.07	18.57	-0.00	-0.32	-0.03
Chile	0.04	0.00	0.04	21.65	0.00	0.18	-0.02
Malta	0.02	0.03	-0.00	26.21	0.00	0.00	-0.07
Panama	0.01	0.03	-0.02	16.58	-0.00	-0.14	-0.00
China	0.00	0.04	-0.04	0.00	-0.00	-0.24	-0.01
Colombia	0.00	0.01	-0.01	0.00	-0.00	-0.06	-0.02
Denmark	0.00	0.04	-0.04	0.00	0.00	0.16	-0.09
Spain	0.00	0.07	-0.07	0.00	0.00	0.33	-0.09



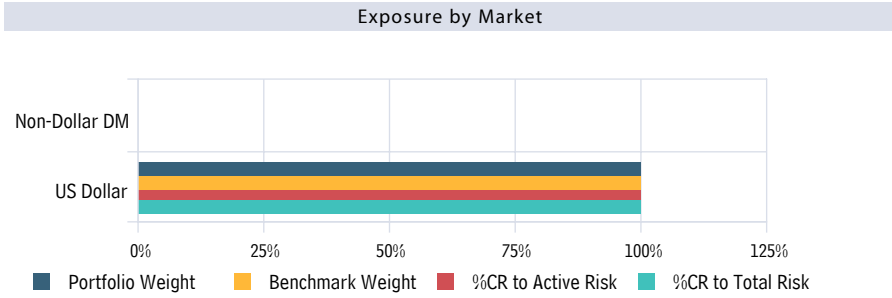
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 MODEL: BIM303L

CURRENCY: USD
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 MARKET VALUE: 511,996,947
 ACCEPTED: 1,547

Portfolio Allocation by Currency



Developed Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)
US Dollar	511,996,946.83	100.00	100.00

Emerging Market Currency			
Top Five	Exposure \$	CR to AR (%)	CR to TR (%)

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							
Total	100.00	100.00		-0.00	12.38	12.38	100.00	0.74	100.00
US Dollar	100.00	100.00		-0.00	12.38	12.38	100.00	0.74	100.00



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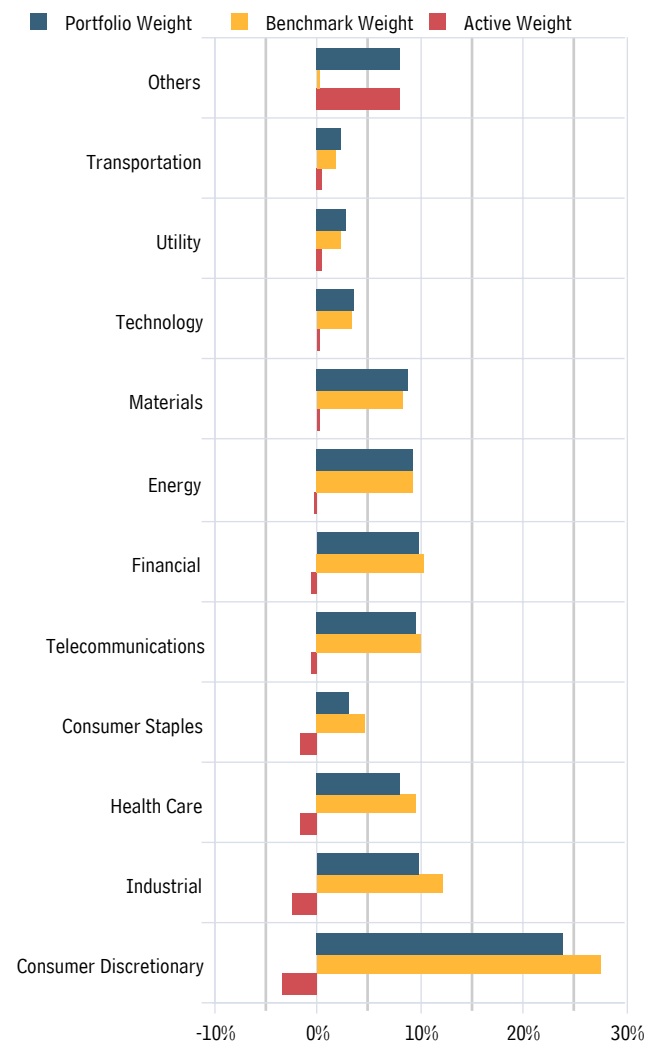
BarraOne Fixed Income Summary

COMPANY: NYCRC - BERS
 PORTFOLIO: Alternative Credit
 BENCHMARK: Alternative Credit
 POSITIONS: 1,551
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 511,996,947
 ACCEPTED: 1,547

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	2.96	12.38	0.74	100.00	0.01
Consumer Discretionary	24.01	27.51	-3.50	0.76	13.06	-0.05	-6.73	-0.05
Financial	9.95	10.38	-0.43	0.22	12.66	0.05	6.98	-0.05
Industrial	9.88	12.12	-2.24	0.30	11.87	-0.02	-2.67	-0.04
Telecommunications	9.70	10.13	-0.44	0.27	10.13	0.04	5.15	-0.04
Energy	9.35	9.46	-0.11	0.41	30.37	0.19	25.78	-0.11
Materials	8.74	8.43	0.32	0.27	14.81	0.02	2.86	-0.05
Health Care	8.06	9.61	-1.56	0.23	11.24	-0.00	-0.43	-0.05
Others	8.03	0.03	8.00	0.03	0.17	0.47	63.69	0.00
Technology	3.76	3.39	0.38	0.13	10.93	0.01	1.89	-0.04
Consumer Staples	3.24	4.71	-1.47	0.18	14.45	-0.02	-2.71	-0.05
Utility	2.87	2.31	0.56	0.10	11.00	0.03	4.15	-0.04
Transportation	2.32	1.73	0.59	0.05	17.30	0.01	2.04	-0.05
Local/Provincial	0.08	0.15	-0.07	0.00	31.24	-0.00	-0.18	-0.04
Government	0.03	0.00	0.03	0.00	9.01	0.00	0.30	0.01



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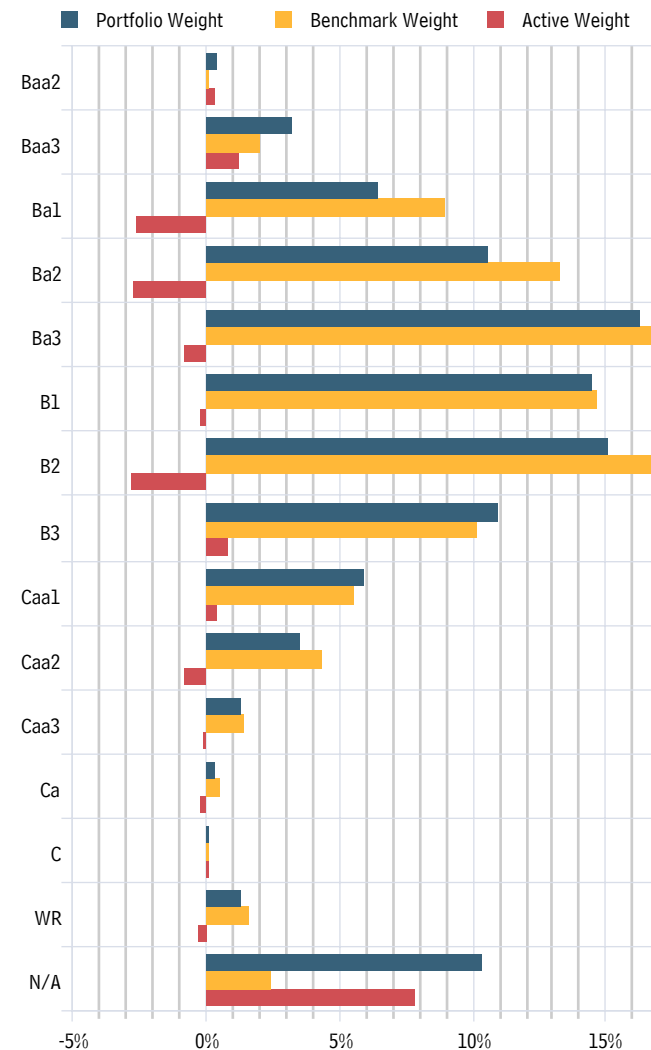
BarraOne Fixed Income Summary

COMPANY: NYCRC - BERS
 PORTFOLIO: Alternative Credit
 BENCHMARK: Alternative Credit
 POSITIONS: 1,551
 MODEL: BIM303L

CURRENCY: USD
 ANALYSIS DATE: June 30, 2020
 MARKET VALUE: 511,996,947
 ACCEPTED: 1,547

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	2.96	3.48	12.38	0.74	100.00
Baa2	0.35	0.08	0.28	0.01	8.79	16.91	0.00	0.31
Baa3	3.20	2.04	1.16	0.21	6.75	14.43	0.06	8.04
Ba1	6.39	8.96	-2.56	0.26	4.99	14.83	-0.03	-3.47
Ba2	10.55	13.29	-2.74	0.40	4.29	12.85	0.06	8.02
Ba3	16.24	17.09	-0.85	0.48	3.51	10.60	-0.01	-1.37
B1	14.42	14.66	-0.23	0.47	3.81	13.54	0.08	10.69
B2	15.05	17.84	-2.79	0.38	3.24	12.50	-0.05	-6.61
B3	10.91	10.11	0.81	0.31	3.18	14.31	0.00	0.02
Caa1	5.89	5.50	0.40	0.19	3.30	26.77	0.08	11.27
Caa2	3.56	4.35	-0.79	0.10	2.94	23.28	0.05	6.35
Caa3	1.33	1.37	-0.04	0.03	2.25	17.38	0.02	3.08
Ca	0.34	0.55	-0.21	0.01	2.86	25.00	-0.00	-0.66
C	0.09	0.09	0.00	0.00	1.23	14.27	0.00	0.47
WR	1.34	1.63	-0.29	0.02	1.89	8.56	0.01	1.47
Not Rated	10.31	2.45	7.86	0.08	1.36	1.89	0.46	62.37



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APPENDICES:

Basket Limit	25.00%
Basket Consumed	17.44%
Remaining Capacity	7.56%

	Basket-Eligible Assets*			Basket Assets	Total
	Non-Basket Assets	Non-Contributing	Contributing		
FIXED INCOME	30.33%	4.19%	0.00%	2.74%	37.26%
U.S. Fixed	12.32%	3.61%	0.00%	2.54%	18.46%
Cash/Equivalent	6.69%	---	---	---	6.69%
TIPS	3.97%	---	---	---	3.97%
High Yield	1.01%	3.60%	0.00%	0.93%	5.54%
Bank Loans	0.06%	0.01%	---	1.59%	1.66%
ETI Investments	0.59%	---	---	0.01%	0.60%
U.S. Structured	18.01%	0.58%	---	0.20%	18.79%
Credit	2.94%	0.53%	---	0.08%	3.55%
Mortgages	3.59%	---	---	0.12%	3.71%
ST Treasury	3.36%	---	---	---	3.36%
Treasury/Agency	8.05%	0.05%	---	---	8.10%
MT Treasury	0.08%	---	---	---	0.08%
EQUITY	30.84%	17.20%	8.33%	6.36%	62.74%
Public Equity	30.80%	10.00%	8.33%	0.07%	49.20%
U.S. Equity	29.45%	0.63%	0.53%	0.00%	30.60%
EAFE	0.28%	5.74%	4.78%	0.03%	10.83%
Emerging Markets	0.02%	3.25%	2.71%	0.03%	6.02%
Global	1.06%	0.38%	0.32%	0.00%	1.76%
Alternative Investments	0.04%	7.20%	---	6.29%	13.54%
Infrastructure	0.00%	1.90%	---	0.00%	1.90%
Private RE/Core	---	3.17%	---	---	3.17%
Private RE/Non-Core	0.01%	2.13%	---	0.00%	2.14%
Private Equity	0.03%	---	---	6.29%	6.32%
TOTAL ASSETS	61.17%	21.39%	8.33%	9.10%	100.00%
	Non-Basket:	82.56%	Basket:	17.44%	

*Basket amounts are estimates



AUM as June 30, 2020

	Current MV	Liquid Assets		
		Today	1 Year	2 Years
PUBLIC EQUITY	\$3,562	\$3,562	\$3,562	\$3,562
U.S.	2,213	2,213	2,213	2,213
EAFE Equity	741	741	741	741
Emerging Markets	481	481	481	481
Global Equity	127	127	127	127
PUBLIC FIXED INCOME	\$2,285	\$2,261	\$2,271	\$2,271
Short Term Securities	123	123	123	123
U.S. Government	829	829	829	829
Mortgages				
Core Mortgages	236	236	236	236
ETI	44	19	30	30
Credit - Investment Grade	256	256	256	256
Corporate - High Yield	392	392	392	392
Corporate - Bank Loans	119	119	119	119
UST - Inflation Protected	287	287	287	287
ALTERNATIVE ASSETS	\$980	\$0	\$0	\$0
Private Equity	457	0	0	0
Private Real Estate	385	0	0	0
Infrastructure	138	0	0	0
Total Assets	\$6,827	\$5,823	\$5,833	\$5,833
Total Illiquid \$		\$1,004	\$993	\$993
Total Illiquid %		14.7%	14.6%	14.6%
Unfunded INF Commitments	\$137			
Unfunded PE Commitments	\$429			
Unfunded RE Commitments	\$201			
Total commitments \$	\$768			
Total commitments %	11.2%			



BERS Liquidity Profile - Static Analysis

AUM as of June 30, 2020

Denominator Effect - Decrease AUM by One-Third

Total Illiquid \$	\$1,004	\$993	\$993
Total Illiquid %	22.1%	21.8%	21.8%

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	\$6,827	\$5,823	\$5,833	\$5,833

Private Equity, Real Estate and Infrastructure Fixed Income Stress Case

Unfunded INF Commitments	\$27	\$55
Unfunded PE Commitments Drawn	\$86	\$172
Unfunded RE Commitments Drawn	\$40	\$81
Total commitments \$	\$154	\$307
Total commitments %	2.2%	4.5%

Total Illiquid \$	\$1,147	\$1,300
Total Illiquid %	16.8%	19.0%

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 \$	\$1,004	\$1,147	\$1,300
Total Illiquid %	22.1%	25.2%	28.6%

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

