



New York City
Board of Education Retirement System
Performance Overview as of March 31, 2020

Total Fund Overview

New York City Board of Education Retirement System

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New York City Board of Education Retirement System (BERS)

Consultant's Commentary – Through March 31, 2020

Total Fund Performance

The Board of Education Retirement System (BERS) Total Fund returned -10.65% net of fees for the quarter ended March 31, 2020, versus the policy benchmark's return of -11.29%. For the fiscal year to date as of March 31, 2020 period, the Total Fund returned -4.85% net of fees, versus the benchmark return of -5.37%.

Total Fund Asset Allocation

As of March 31, 2020, the BERS Total Fund had \$6.14 billion, down from \$6.86 billion at December 31, 2019. The Total Fund loss less than the policy benchmark due to the asset allocation and manager value effect which added relative value. The U. S. Treasury short term allocation added the most value during the quarter. From a manager value effect, the exposure to world ex U.S. mitigated the most losses.

U.S. Equity Commentary

As of March 31, 2020, U.S. Equity was \$1.81 billion or 29.5% of the NYBERS Total Fund. The U.S. equity composite was negative in the first quarter of 2020 returning -20.57%. This performance was slightly better than the Russell 3000 index return of -20.90%.

Active U.S. Equity Managers

- **Wellington Mid Cap Core** returned -24.14% during the quarter, which was better than the S&P Midcap 400 Index return of -29.70%. For the fiscal year to date as of March 31, 2020, Wellington returned -19.85% versus -24.80% for the S&P Midcap 400 Index. Wellington is the only active mid cap U.S. manager. BERS is participating in the search to expand the allocation to active mid-cap U.S. strategies.
- Sector allocation, a result of their bottom-up stock selection process, was a driver of relative outperformance. Allocation effect was driven by their overweight to healthcare and information technology as well as an underweight to energy, but modestly offset by their underweight to consumer staples and utilities sectors. Stock selection also contributed to returns. Strong stock selection in industrials, materials and information technology was partially offset by poor stock selection in consumer staples and health care.

Through March 31, 2020



- At the issuer level, their top two relative contributors were out of benchmark allocations to Ball and Veeva Systems, while their top two relative detractors were also out of benchmark allocations to PVH Corp and an overweight to WEX Inc. Shares of Ball were volatile for the period but ended flat. The company reported fourth quarter results in February that missed on EBIT estimates due to ongoing metal supply issues and FX headwinds, but investors were encouraged by strong global beverage can volume growth. Shares of PVH, a US-based global apparel company, fell as investors anticipated a dramatic slowdown in retail demand globally in response to COVID-19. The company was also forced to close many stores in China early in the period which will likely lower revenue results for 1Q20.
- **Wasatch Small Growth** returned -23.03% during the quarter, losing less than the Russell 2000 Growth Index return of -25.76%. Wasatch is the only active small cap U.S. manager.
- The top contributor performance was Five9, Inc. (FIVN), which provides contact-center software that is managed and hosted from the cloud. The company offers real-time and historical reporting, quality monitoring, and workforce and customer-relationship-management integrations. The stock benefited from the superiority of cloud based software, which has become especially evident during the pandemic. On a longer-term basis, Five9 has competitive advantages that make it the dominant growth company in its industry. First, Five9 offers compelling products that address mission-critical customer needs, and the company has been leveraging these products with high research-and-development spending. This has resulted in technological leadership, which has created a barrier to entry preventing competitors from gaining a foothold. Second, the company has been enhancing its products for reliability, functionality and scalability at the enterprise level—thereby opening new revenue opportunities.
- The largest detractor from performance was National Vision Holdings, Inc. (EYE), which provides eye exams, eyeglasses and contact lenses at “value-oriented” prices. The company also offers its products online. Because most vision appointments are currently being postponed, the coronavirus pandemic will likely continue to impact National Vision’s sales and earnings. This situation has caused a substantial decline in the company’s stock price. We think its balance sheet is healthy enough to weather this slowdown and, once conditions normalize, we expect to see an acceleration in National Vision’s same-store sales, especially since consumers still hurting from a recession typically gravitate to value-oriented brands. Looking ahead, we think the company will be able to keep its margins intact and grow at double-digit rates for the next five years or so.

World ex-USA Commentary

As of March 31, 2020, World ex-USA Equity was \$671.0 million (10.9%) of the NYBERS Total Fund. World ex-USA Equity returned -21.53% in the first quarter of 2020 versus -24.00% for the World ex-USA custom benchmark.

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Active World ex-USA Equity Managers

- **Sprucegrove** returned -28.59% during the quarter versus -23.26% for NYC Developed Value Benchmark. For the fiscal year to date as of March 31, 2020, Sprucegrove returned -25.81% versus -18.00% for the NYC Developed Value Benchmark.
- The portfolio continues to represent high quality value style holdings with a projected ROE of 14.7%, 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 10.2x, a 1.6x P/B and a 4.2% 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.
- The U.K. was the largest country exposure in the Fund at 23.0%, followed by Japan at 15.0%. Exposure to Emerging Markets was 12.4% and cash was 2.0% of the Fund at quarter end.
- Over the quarter, the Fund's underperformance was mainly due to an overweight position in the United Kingdom, Singapore, and Norway. Emerging Markets exposure (India, Brazil) also had a negative impact on a relative basis. Underperformance was partially offset by positive relative performance due to an underweight position in Canada, Japan, and Australia. A combination of underweight position coupled with stock selection in France (Air Liquide, Total) also had a positive impact on relative performance.
- The top 10 holdings represent 23.4% of the portfolio.

- **Baillie Gifford** returned -13.84% in the quarter versus -23.26% for NYC Developed Growth Benchmark. For the fiscal year to date as of March 31, 2020, Baillie Gifford returned -4.62% versus -18.00% 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 14.8% invested in Emerging Markets.
- The top 10 holdings represent 44.2% of the portfolio.

- **Acadian** outperformed for the quarter, -25.51% versus -27.73% for the S&P EPAC Small Cap Index. For the fiscal year to date as of March 31, 2020, Acadian returned -19.37% versus -20.55% for the S&P EPAC Small Cap Index.
- For the first quarter, the portfolio outperformed its benchmark by 222 basis points.

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- The portfolio had a P/E of 9.6x while the benchmark had a P/E of 14.1x.
- At quarter end, the portfolio's emerging markets exposure was 10.7%. The portfolio held 1,207 stocks.
- **Algert** underperformed for the quarter, -28.66% versus -27.52% for the MSCI EAFE Small Cap Index. For the fiscal year to date as of March 31, 2020, Algert returned -21.71% versus -19.52% for the MSCI EAFE Small Cap Index.
- During the first quarter, stock selection was a detractor to performance as was the Strategy's allocation across various common risk factors (e.g. a company's industry, country, size and beta characteristics). Relative Value-driven exposures were a detractor to performance during the quarter. Out of favor companies with attractive valuations materially underperformed peers as investors rotated away from these firms given increasing doubts about their long-term viability and competitive ability amid a prolonged economic slowdown. While Relative Value exposures led to losses overall, performance varied by region. Similar to the fourth quarter of 2019, stocks with attractive valuations modestly outperformed their peers in Europe. In Asia however, Relative Value exposures underperformed, particularly in Japan. In general, valuation metrics based on the relative strength of earnings, both historical and forecasted, were not predictive of returns across the globe.
- The portfolio contains three investment themes, Catalyst, Quality and Relative Value models. As of March 31, 2020, approximately 42% of the stock selection model was focused on the Catalyst model, while the Quality and Relative Value models accounted for 33% and 25% respectively.
- The portfolio held 151 stocks compared to MSCI EAFE Small Cap of 2,322 stocks.

Emerging Markets Equity Commentary

As of March 31, 2020, Emerging Markets Equity was \$361.6 million or 5.9% of the NYBERS Total Fund. Emerging Markets underperformed for the quarter, -24.23% versus -23.60% for the MSCI Emerging Markets, Net Index.

Emerging Markets Equity Managers

- **Acadian** underperformed for the quarter, posting a -24.49% versus -23.60% for the MSCI Emerging Markets, Net Index. For the fiscal year as of March 31, 2020, Acadian returned -19.98% versus -18.18% for the MSCI Emerging Markets, Net Index.
- The portfolio had a P/E of 8.5x, while the benchmark had a P/E of 12.5x. At quarter end, the portfolio held 405 stocks.

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- Biggest detractors by country: Thailand, Brazil, South Korea, Turkey and Colombia. Biggest detractors by sector: Consumer Staples, Communication services, Consumer Discretionary, Health Care and Information Technology.
- Top Contributors by country: India, China and Mexico. Top Contributors by sector: Financials, Materials and Energy.
- **CONY GT EM BlackRock** returned -23.64% versus -23.60% for the MSCI Emerging Markets, Net Index during the quarter. CONY GT EM BlackRock slightly outperformed for the fiscal year as of March 31, 2020 returning -18.16% versus -18.18% for the MSCI Emerging Markets, Net Index.
- Through a country lens, China outperformed the region in the recent global selloffs, falling only -10.3% since beginning of this year, vs. -23.59% in the broader EM index. Chinese equities have been supported by strong monetary and fiscal easing measures to fight the economic impact of Covid-19 while recent drop in oil prices and slower inflation growth may give the Peoples Bank of China more room to ease policy from what was already very accommodative short-term rates in real terms. New cases in China continued to dwindle, suggesting that coronavirus cases have peaked in China. China's official manufacturing PMI for March came in at 52, while the non-manufacturing gauge was 52.3, signaling a relatively strong recovery.
- All GICS 1 sectors declined in the quarter, with the energy sector (-39.8%) declining the most. Healthcare (-8.5%) and consumer services (-9.6%) outperformed in the region as the exposures saw stronger demand amid the Coronavirus outbreak.

Global Equity Managers

- **Morgan Stanley** returned -11.64% versus -21.37% for the MSCI AC World Index, during the quarter. Morgan Stanley outperformed for the fiscal year as of March 31, 2020 returning -4.39% versus -14.35% for the MSCI AC World Index.
- Global equities declined sharply during the period, in a broad sell-off driven by concerns regarding COVID-19 and its potential impacts to global economic activity. Every sector declined, driven by underperformance in energy, financials and materials. The healthcare, information technology and consumer staples sectors outperformed the MSCI AC World Index.
- Stock selection in consumer discretionary was the largest overall contributor to the relative performance of the portfolio, as shares of Chinese tutorial provider TAL Education and online retail and cloud computing leader Amazon outperformed. TAL Education announced accelerated enrollment in online classrooms as parents seek tutorial services for their children to study at home. TAL Education is the leading provider of math and science tutoring, with over three million student enrollments across 794 learning centers in 70 cities in China.

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- **Fiera** returned -17.17% versus -21.05% for the MSCI World Index, during the quarter. For the fiscal year as of March 31, 2020, Fiera returned -9.47% versus -13.84% for the MSCI World Index.

Fixed Income – Structured Manager Composite Commentary

As of March 31, 2020, the Total Structured Portfolio was \$1.34 billion or 21.8% of the NYBERS Total Fund. Structured Fixed Income returned +6.61% in the first quarter versus +7.66% for the benchmark. For the fiscal year to date as of March 31, 2020, Structured Fixed Income returned +9.18% versus +10.48% for the benchmark.

Fixed Income – Structured Manager Composite Managers

- **BlackRock (mortgages)** returned +2.15% in the quarter, underperforming the FTSE Mortgage index return of +3.27%. For the fiscal year as of March 31, 2020, BlackRock (mortgages) returned +4.39% versus +5.63% for the FTSE Mortgage index.
- Sector allocation and underweight positions to both the 15YR PT and 30YR PT detracted from performance on a relative basis. While, the portfolio's duration positioning and allocation to Agency collateralized mortgage obligations benefited results versus the index.
- At quarter end, the portfolio held 1,460 holdings.
- **Prudential (credit)** returned -3.89% in the quarter, underperforming the Investment Grade Credit Index return of -3.01%. For the fiscal year as of March 31, 2020, Prudential (credit) returned +0.10% versus +0.91 for the Investment Grade Credit Index.
- **SSgA LI Treasury (governments)** returned +14.09% in the quarter, greater than the +13.78% return for its NYC - Treasury Agency plus five index benchmark. For the fiscal year as of March 31, 2020, SSgA (governments) returned +16.74% versus +16.22% for the NYC - Treasury Agency plus five index benchmark.
- **SSGA 1-10 Yr. Treasury/ Agency** returned +5.30% in the quarter, versus the FTSE USBIG Treasury/Agency 1-10 Yr. Index return of +5.13%. For the fiscal year as of March 31, 2020, the SSgA 1-10 Yr. Treasury Index returned +6.56%, versus the FTSE USBIG Treasury/Agency 1-10 Yr. return of +6.37%.

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- In January, the US 10-Year Treasury yield reflected growing concerns around the impact of the coronavirus, declining sharply mid-month on the back of more information and further outbreaks. At the beginning of the month, the 10-Year yield was at 1.88%, generally in line with the levels we experienced in December. However, by January 31st, the 10-Year yield fell 37 basis points to 1.51%, the lowest since the troughs of early September 2019 when headlines were hyper-focused on US/China trade war uncertainty. In contrast to December, the 2s-10s curve flattened from the start-of-the-month high of 30 basis points, closing at the near intra-month low of 18 basis points on January 31st.
- February's month-end rush to safety saw US Treasury rates fall across the term structure. On February 3rd, the 2-, 10-, and 30-Year yields were 1.33%, 1.51%, and 1.99%, respectively. By February 28th, they were 0.86%, 1.13%, and 1.65%, respectively. The US 30-Year Treasury yield had already hit its intra-month all-time-low at 1.89% on February 21. The 2s-10s curve started the month at 18 bps, fell to its intra-month low of 12 bps on February 21, and spiked to 27 bps by month-end as the market continued to price in additional rate cuts that pulled short-term rates lower.
- Momentum from the coronavirus outbreak and sudden oil price war between Saudi Arabia and Russia pressured US rates down further in March as the entire US Treasury yield curve fell below 1% for the first time ever. The US 10-Year and 30-Year Treasury yields hit their respective all-time lows of 0.32% and 0.70% in overnight trading on March 9. The Fed implemented two emergency rate cuts in this month, the first time it has taken such measures since the Global Financial Crisis. The first 50 bps cut was on March 3, followed by a 100 bps cut down to 0% on March 15. The 2s-10s curve started the month at 27 bps, fell to its intra-month low of 16 bps on March 9th, but steepened to 47 bps by month-end on the back of significant aid in the form of monetary and fiscal stimulus.
- **SSgA 1 -3 Yr. Treasury Index** returned +2.74% in the quarter, versus the FTSE USBIG Treasury 1 -3 Yr. Index return of +2.67%. For the fiscal year as of March 31, 2020, the SSgA 1-3 Yr. Treasury Index returned +3.86%, versus the FTSE USBIG Treasury 1 -3 Yr. Index return of +3.79%.
- **Taplin, Canida & Habacht** returned -4.21% in the quarter versus -3.01% for the Investment Grade Credit Index. For the fiscal year as of March 31, 2020, Taplin, Canida & Habacht returned +0.35%, underperforming the Investment Grade Credit Index of +0.91%.
- Fears surrounding the coronavirus and the economic impacts of policies designed to contain the global pandemic led to extreme spread widening for corporate credit (-1,272 bps excess returns) and broad underperformance for non-Treasury assets in fixed income. By quality, lower quality investment grade (BBB -1,737 bps) and high yield (-1,703 bps) underperformed higher quality as would be expected in this type of environment. The massive monetary policy interventions by the Fed helped improve market conditions at the end of the first quarter.

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- Security selection was the largest negative contributor to performance in the quarter; in particular selection within the energy, automotive and retail sectors detracted from returns, while selection within the healthcare sector was favorable. As liquidity evaporated, bid / ask spreads widened meaningfully, impacting pricing of individual securities significantly. The overweight to corporate versus non-corporate credit reduced relative returns as corporates underperformed the benchmark.

Enhanced Yield Fixed Income & Bank Loans Commentary

As of March 31, 2020, Enhanced Yield Fixed Income & Bank Loans was \$376.7 million or 6.1% of the NYBERS Total Fund.

- **Mackay Shields** returned -11.12% in the quarter versus -12.68% for Bloomberg Barclays US High Yield – 2% Issuer Cap Index. For the fiscal year as of March 31, 2020, Mackay Shields returned -7.44% versus -9.21% for the Bloomberg Barclays US High Yield – 2% Issuer Cap Index.
- The portfolio's underweight to lower quality credits was beneficial for returns during the quarter. An overweight and positive security selection in the Telecom-Wireless sector helped returns as the bonds of T-Mobile and Sprint outperformed after their planned merger was completed. Selection was also positive in the Aerospace/Defense sector, as the portfolio did not own the bonds of Bombardier, which significantly underperformed during the quarter. An overweight and security selection in Advertising also was positive for returns.
- Energy positioning and selection was positive for performance over the quarter. An underweight and positive security selection within the Oil Field Equipment and Services sector was the largest contributor to returns during the quarter. Positive security selection also benefitted returns in the Gas Distribution sector. An overweight to the Exploration and Production sector was negative for performance.
- **Nomura** returned -13.20% in the quarter versus -12.68% for Bloomberg Barclays US High Yield – 2% Issuer Cap Index. For the fiscal year to date as of March 31, 2020, Nomura returned -9.87% versus -9.21% for the Bloomberg Barclays US High Yield – 2% Issuer Cap Index.
- The portfolios' performance during the quarter was overwhelmingly driven by the market volatility and sell-off in risk assets that characterized most of March. The higher-rated segments of the market were down much less than lower-rated names, so the overweight to credit risk was a drag on relative performance. From a sector perspective, the top contributors on a relative basis included positive security selection in Hotels and Transportation Infrastructure/Services, the overweight to Software/Services, and a large underweight in REITs. From an issuer perspective, the underweights to DCP Midstream (DCP) and QEP Resources (QEP) were key drivers of relative performance. In Pharmaceuticals, Bausch Health (BHCCN) continued to perform well.
- The main sector detractors included Gaming, Support-Services, and Oil Field Equipment & Services. The underweight to Energy-Exploration & Production (E&P) helped, but not enough to offset the extreme stress on many credits in that sector caused by the collapse in oil prices. Key E&P

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detractors included Denbury Resources (DNR) and Bruin E&P (BRUINE). Golden Nugget (NUGGET) suffered a downturn, along with other Gaming names, particularly after Nevada Governor Steve Sisolak ordered a 30-day statewide shutdown of casinos (and other non-essential businesses) on March 18th. In Support-Services, Hertz (HTZ) continued to be hurt by coronavirus-related shutdowns, but the company is aggressively managing costs and has sufficient liquidity to weather the crisis.

Enhanced Yield Fixed Income & Bank Loans Managers

- **Barings** returned -12.26% during the quarter, outperforming the -13.19% return of the Credit Suisse Leveraged Loan Index. For the fiscal year to date as of March 31, 2020, Barings returned -9.70% versus -10.92% for the Credit Suisse Leveraged Loan Index.
- First quarter attribution analysis indicates that “cash was king” in a market that declined by double-digit percentages. Typically, any amount of cash not invested in loans is a drag on portfolio returns but that was clearly not the case during the first quarter as Sector Allocation proved to be the meaningful contributor to favorable performance comparisons benefitting as it did from a 3.18% average cash position in a market returning -13.19%. Credit a more conservative orientation toward invested cash coming into 2020 following 2019 market volatility that favorably impacted results although overall the manager’s intent is to generally minimize cash weightings. A conservative approach to portfolio positioning in defensive sectors Financial and Wireless Communications and a continued aversion to the risks in Retail added to the result as Sector Allocation overall accounted for a very positive contribution to the quarterly results.
- Credit Selection was key detractor and offset the favorable Sector Selection for the period. The pandemic had the unfortunate effect of impacting otherwise credit worthy issuers such as event coordinator AVSC Holdings and theater operator Cineworld in the Service and Gaming/Leisure space. Other travel and leisure issuers were similarly affected and weighed on quarterly results. In what appears to be a never ending constant was the underperformance of the Energy sector which likely suffered a fatal blow for leveraged issuers as a Saudi/Russian oil price war on top of plummeting demand for all things oil related drove oil prices as measured by WTI below \$20 per barrel before rebounding into the low \$20s. Few issuers in the Energy Sector in the service or production side of the space can succeed financially in such a low oil price and low demand environment with any degree of leverage on their balance sheets. A quick look at the top ten underperformers during the quarter will reveal the usual contributors including Fieldwood, Seadrill Partners and Boomerang Tube.

TIPS, ETI, Cash Commentary

As of March 31, 2020, Fixed Income – TIPS, ETI and Cash was \$406.08 million or 6.6% of the NYBERS Total Fund.

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Fixed Income – TIPS Managers

- **SSgA (TIPS)** returned +1.77% in the quarter, better than the +1.69% return for its Barclays Global Inflation Linked Index. For the fiscal year to date as of March 31, 2020, SSgA (TIPS) returned +3.94%, versus the +3.87% return for the Barclays Global Inflation Linked Index.

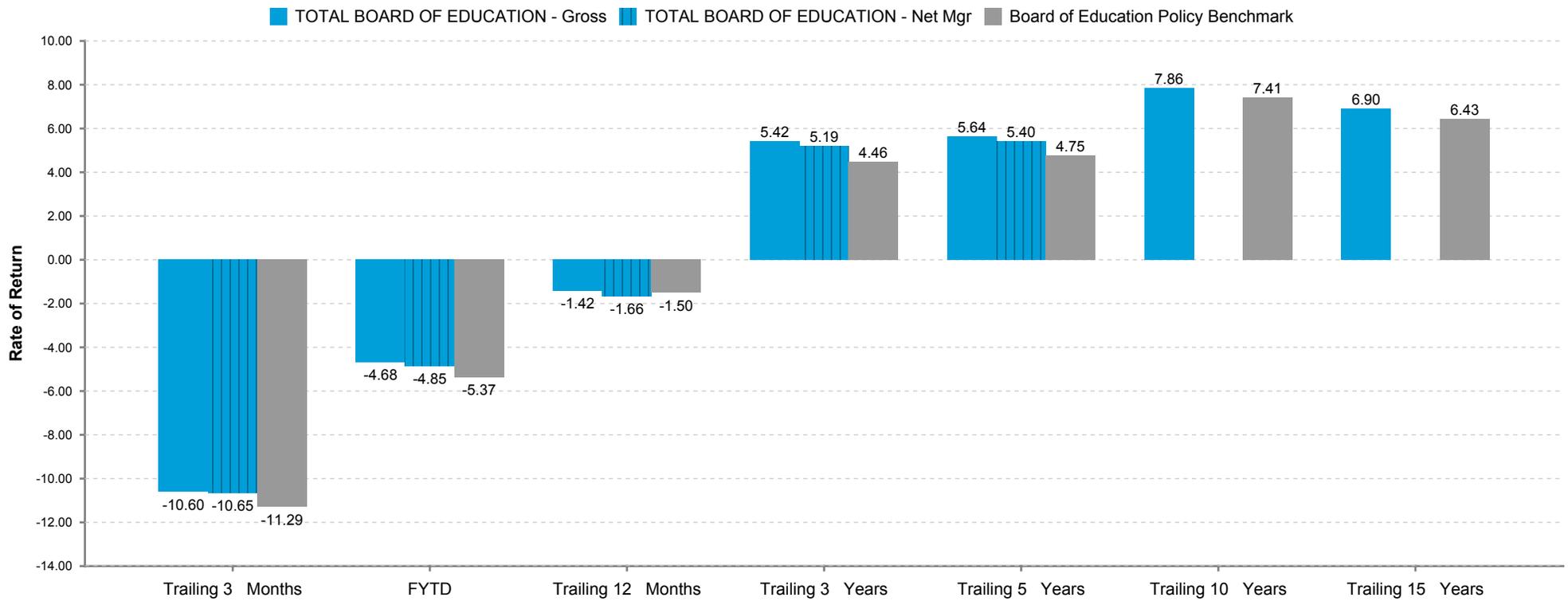
Total Portfolio Returns: March 31, 2020



Market Value (Billions)

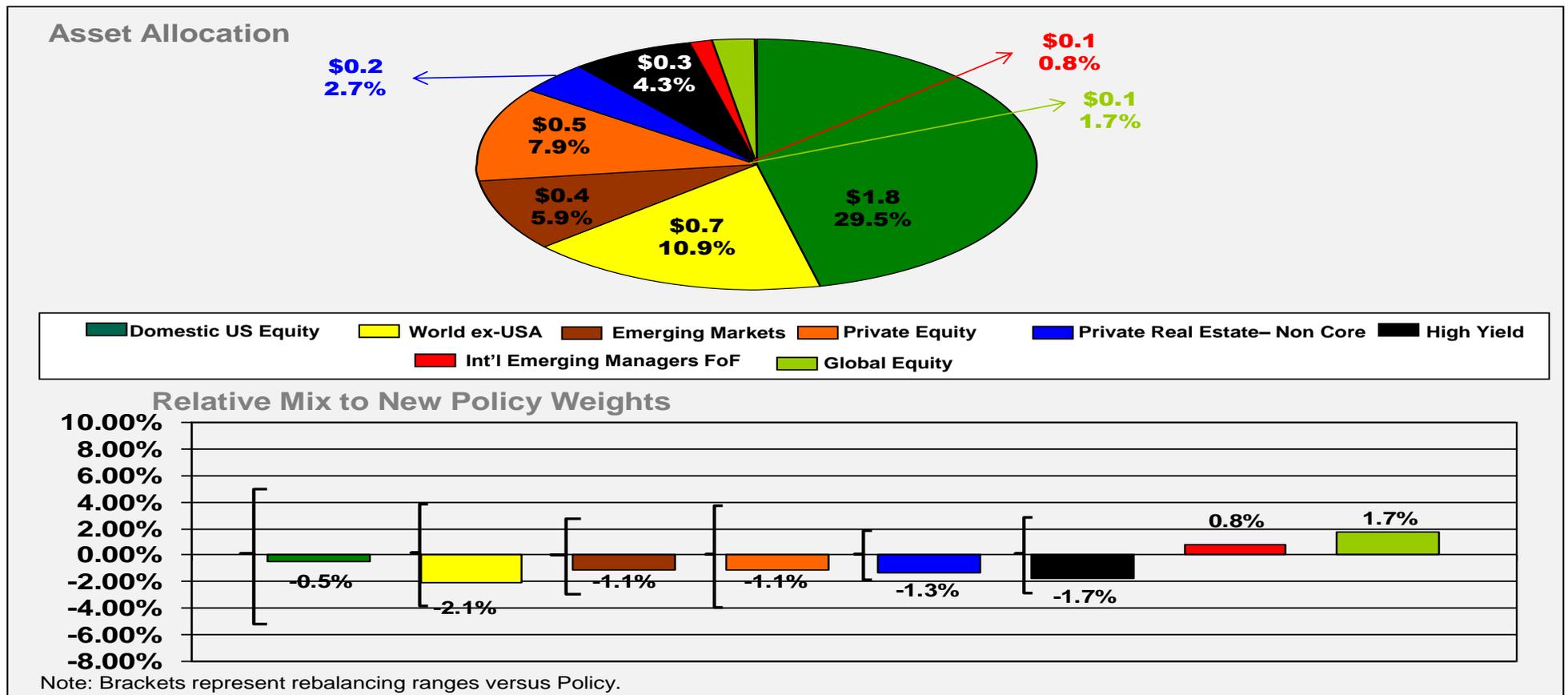
\$6.1

TOTAL BOARD OF EDUCATION

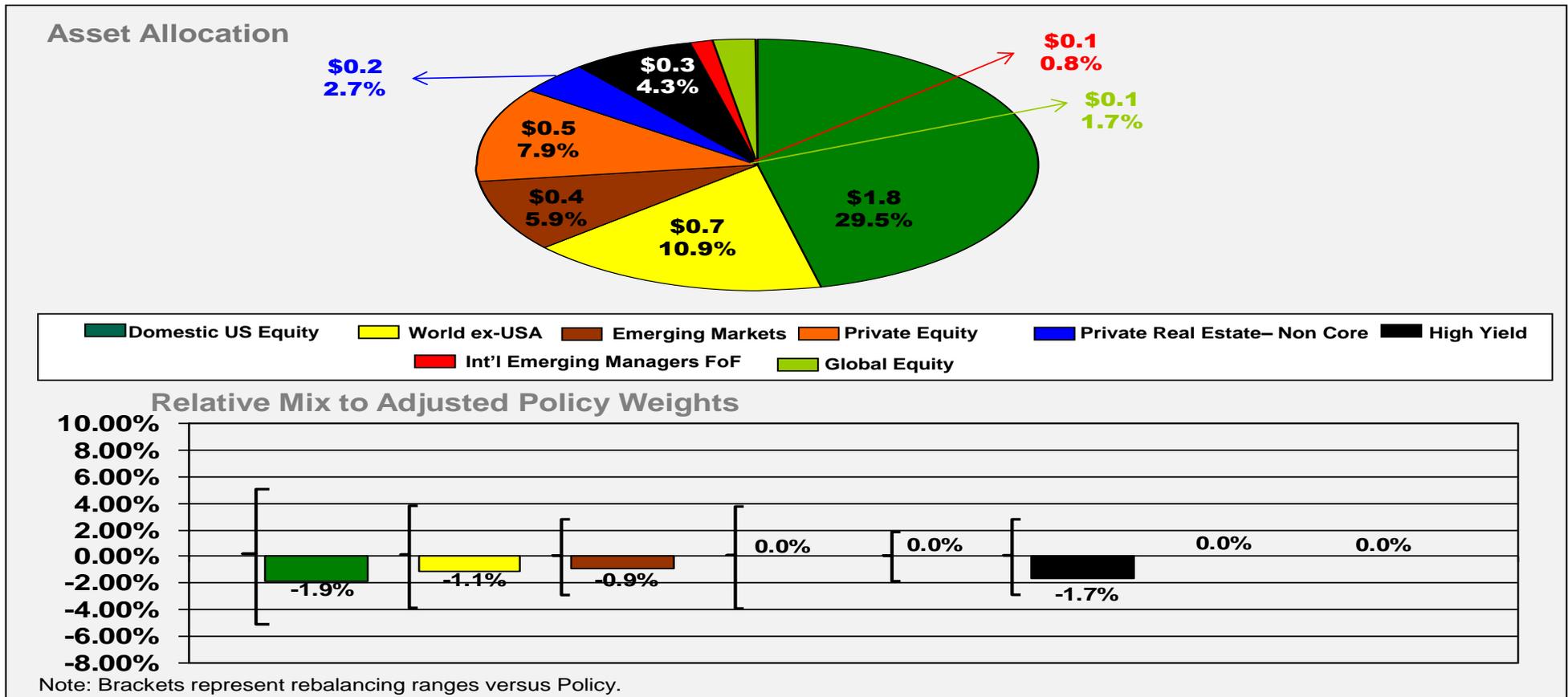


	Plan 3 Years	Benchmark 3 Years	Plan 5 Years	Benchmark 5 Years	Plan 10 Years	Benchmark 10 Years
Standard Deviation						
TOTAL BOARD OF EDUCATION	8.4	8.6	5.6	8.1	8.8	8.9

Portfolio Asset Allocation – Growth

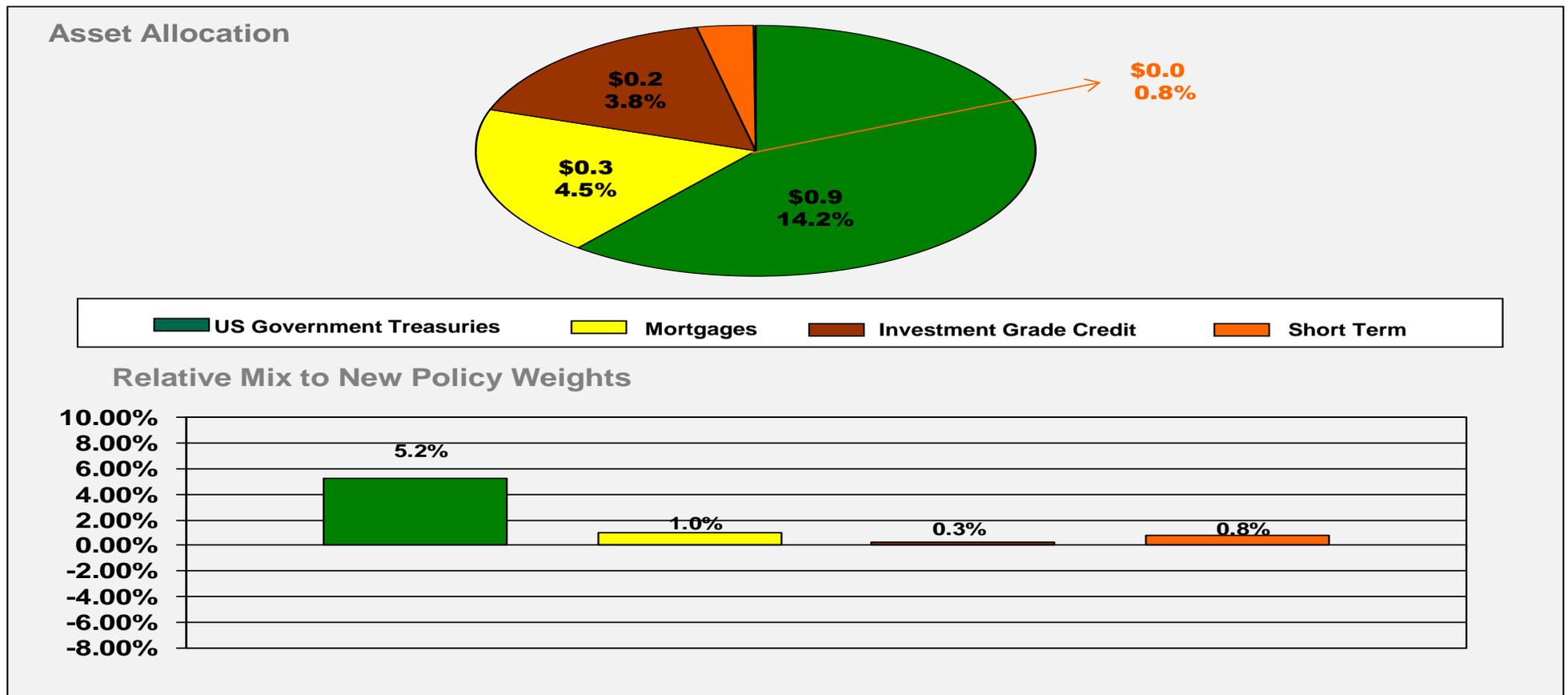


Portfolio Asset Allocation – Growth

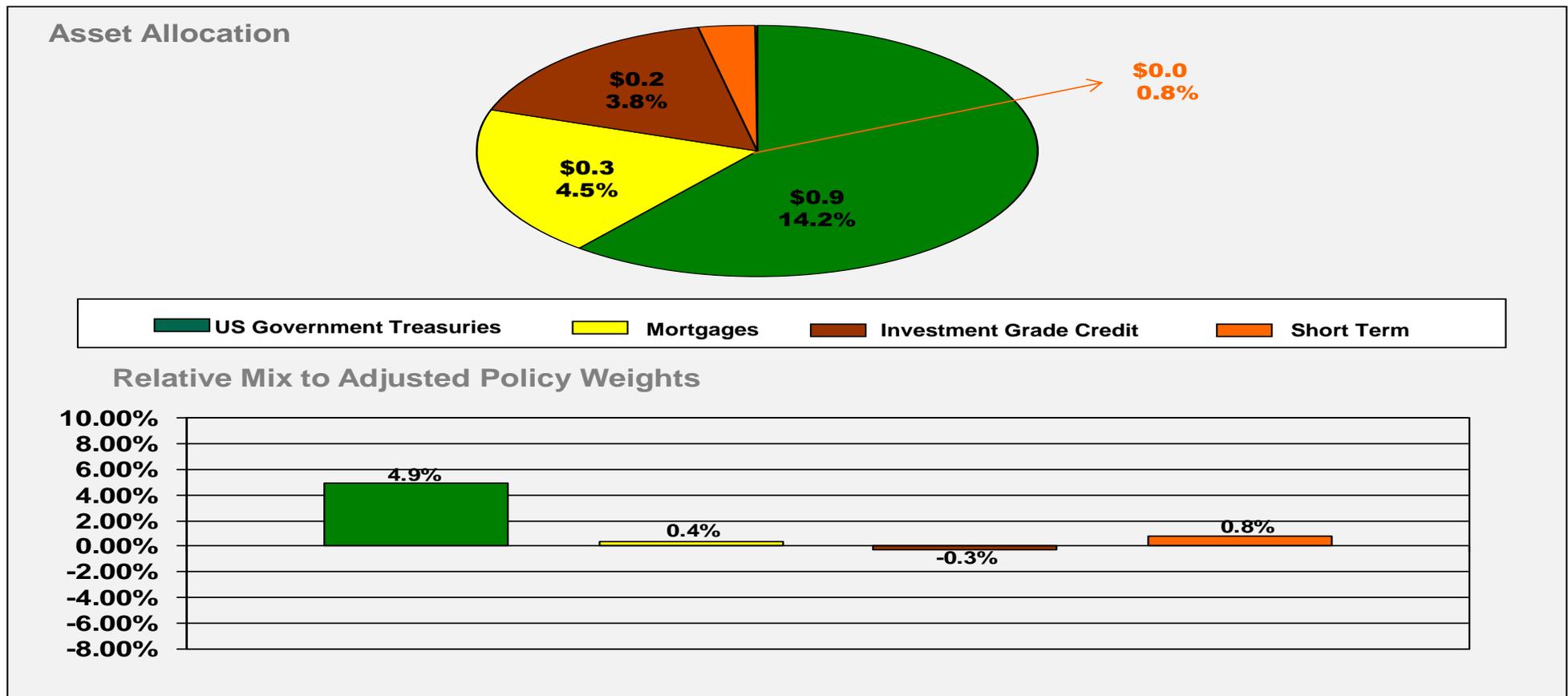


Note: On March 31, 2020 BERS' combined Fixed Income and Cash portfolios have a duration of 6.9 years. The duration of the Barclays US Aggregate Index was 5.7 years on that date.

Portfolio Asset Allocation – Deflation Protection

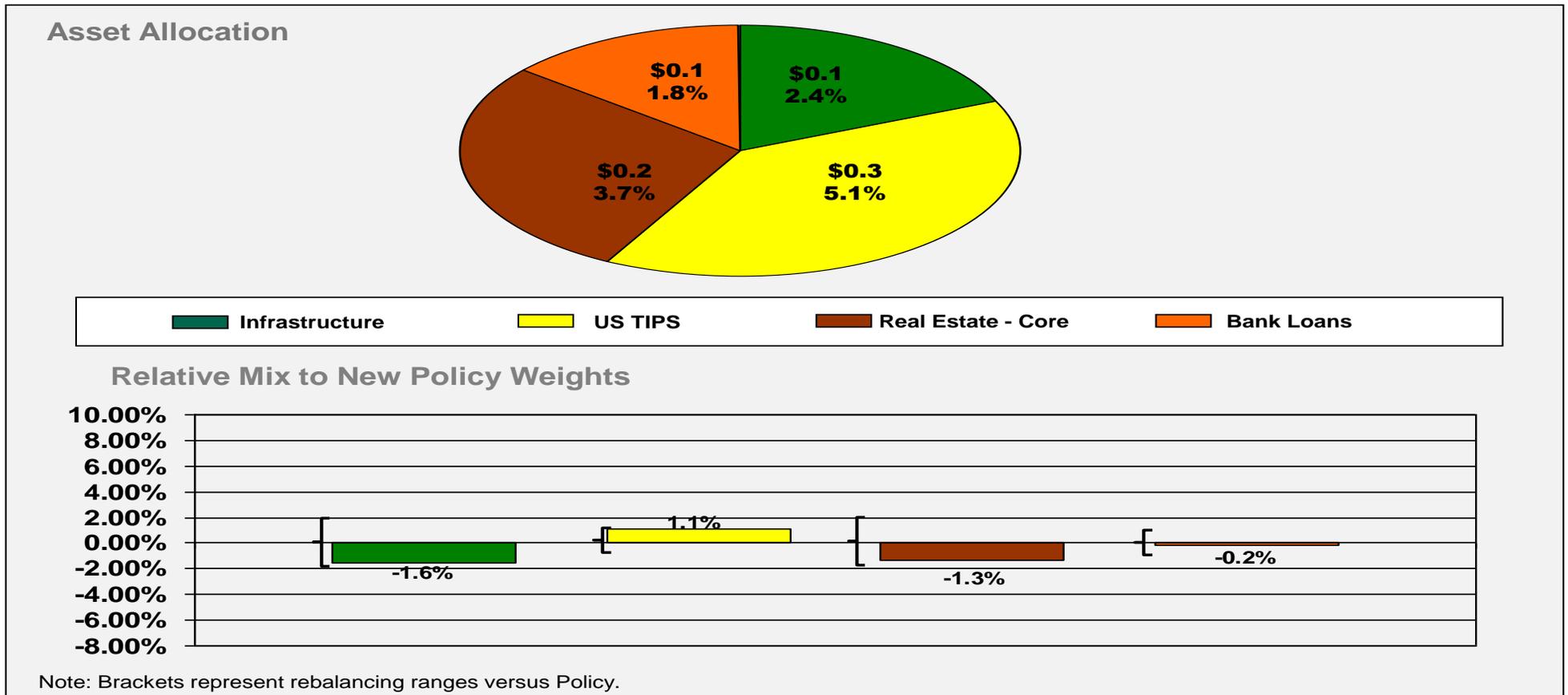


Portfolio Asset Allocation – Deflation Protection

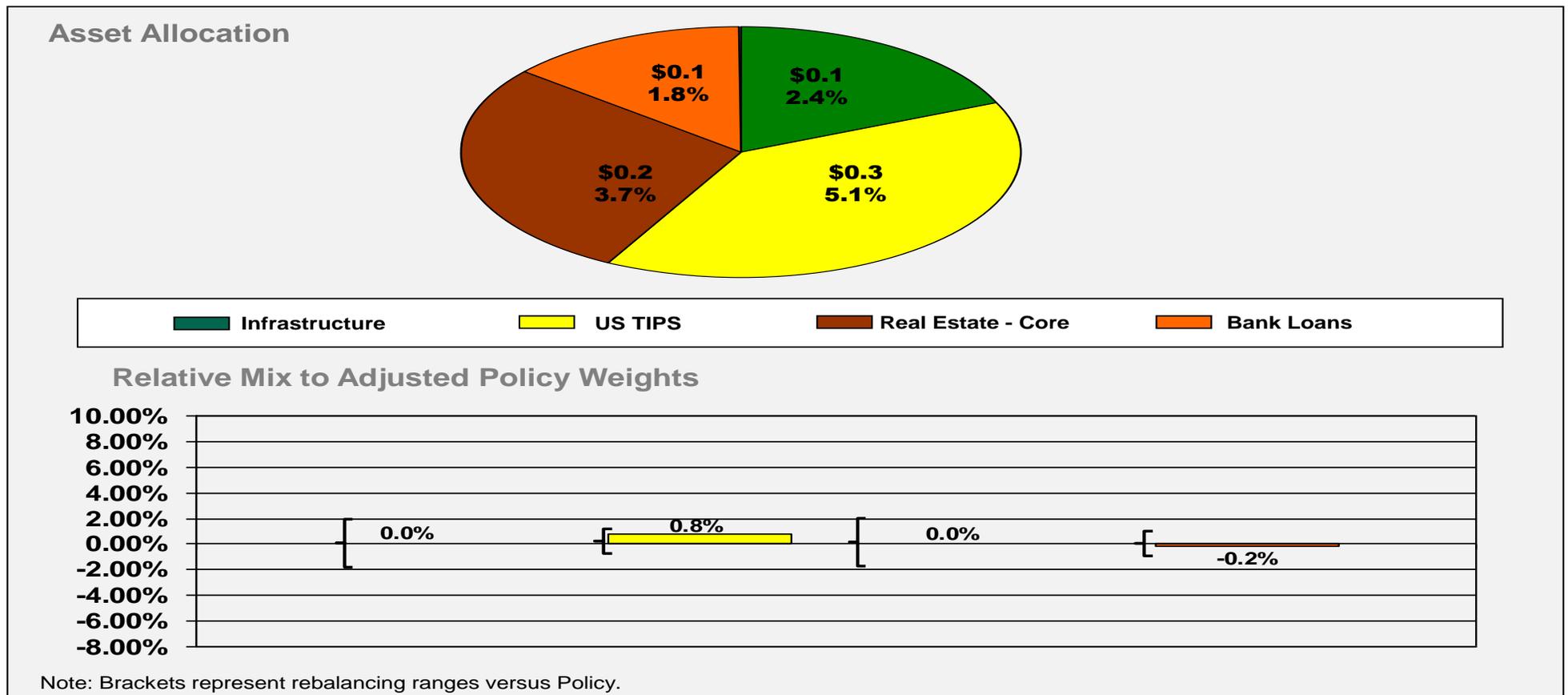


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Portfolio Asset Allocation – Inflation Protection

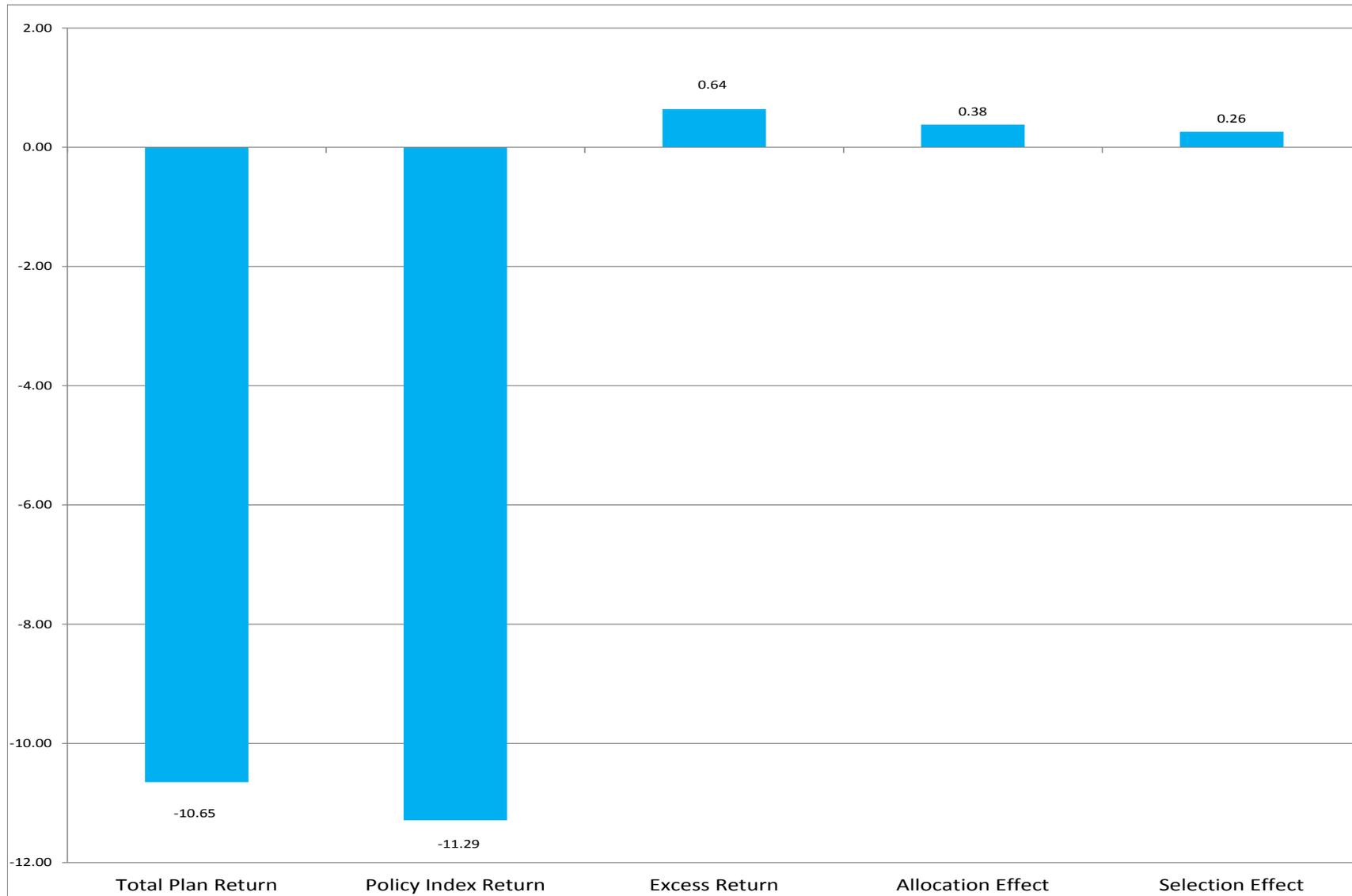


Portfolio Asset Allocation – Inflation Protection

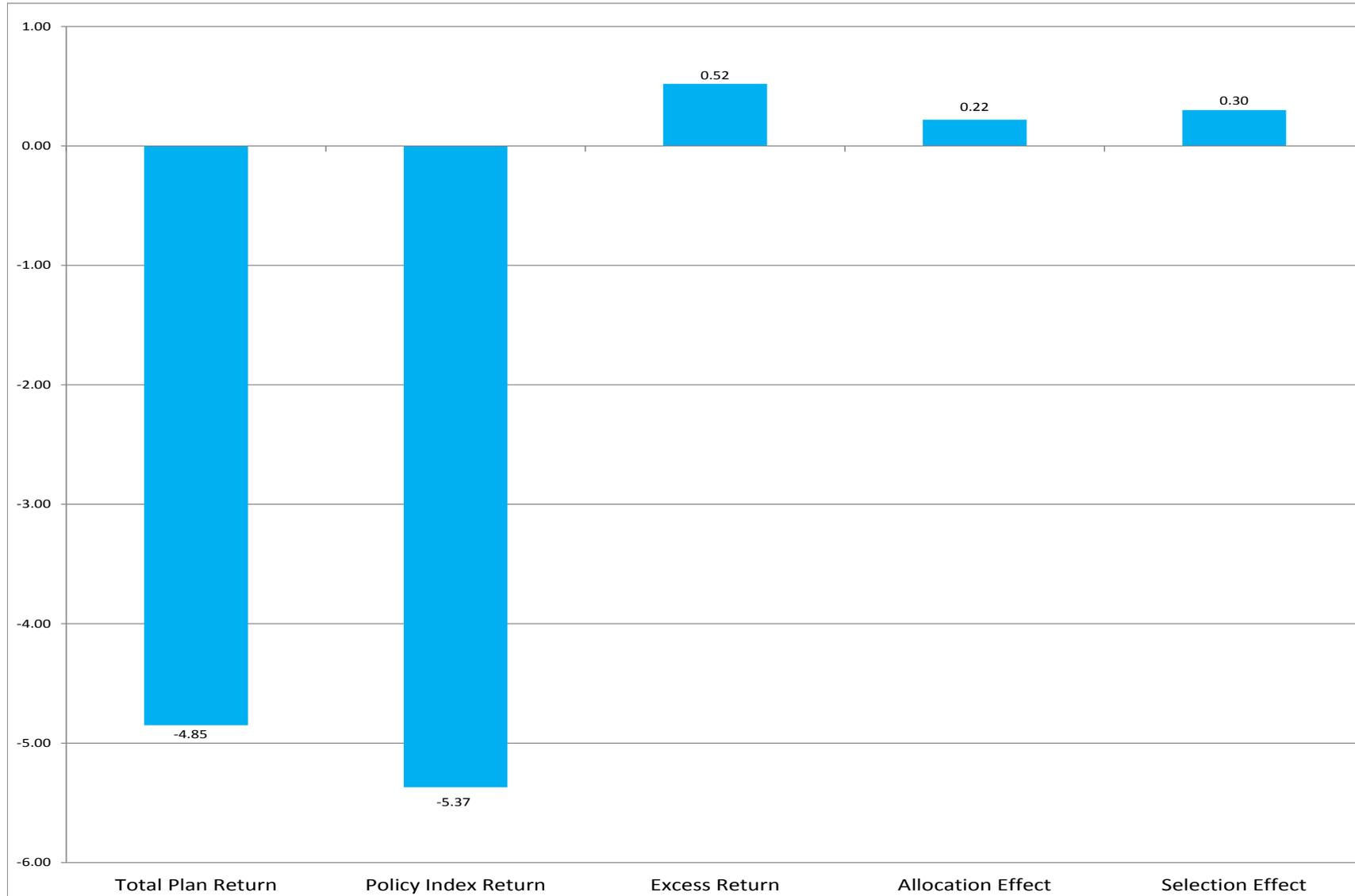


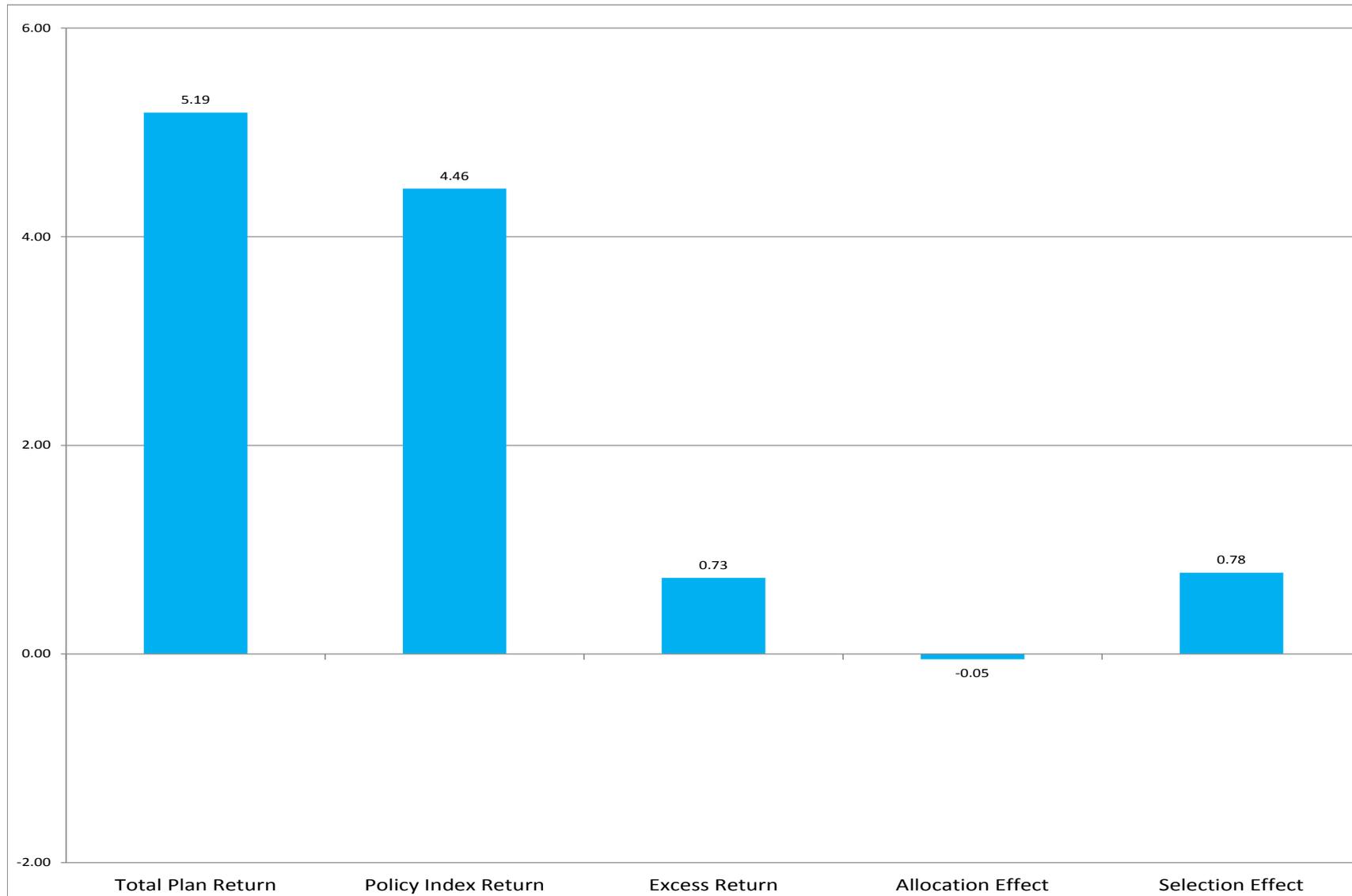
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Performance Attribution: Total Plan - Quarter Ending: March 31, 2020



Performance Attribution: Total Plan - Fiscal Year To Date: March 31, 2020





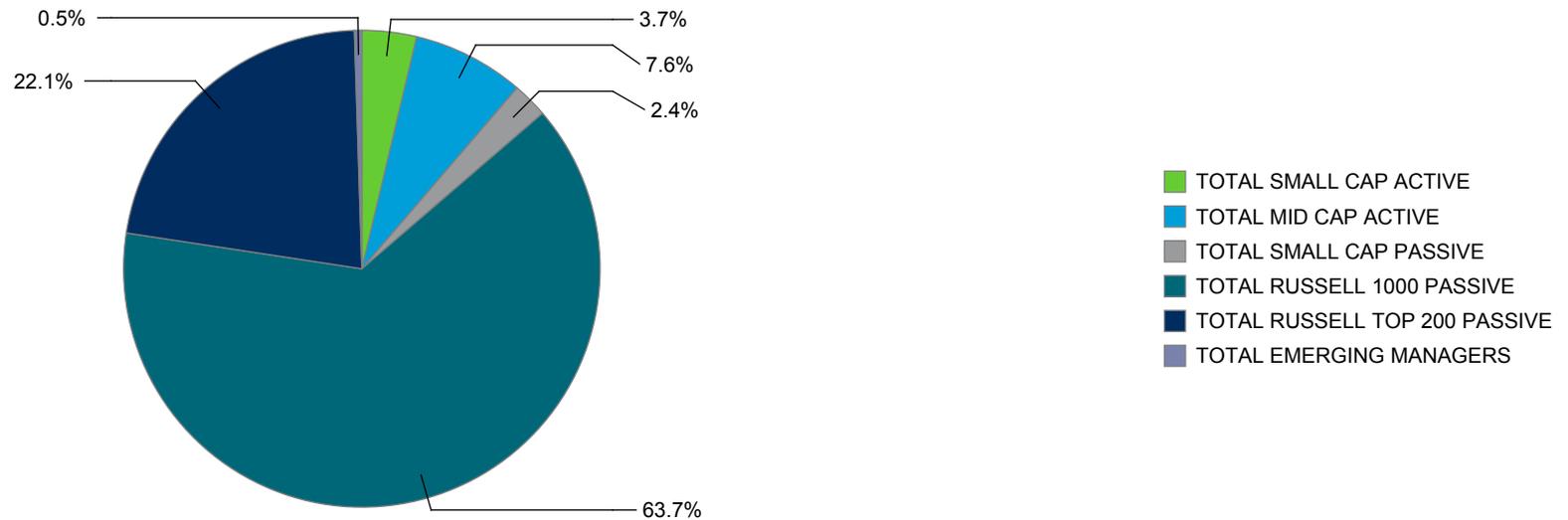
Allocation Effect - Asset Class Breakdown				
	<u>Quarter</u>	<u>FYTD</u>	<u>3 Years</u>	<u>Benchmark</u>
TOTAL BOARD OF EDUCATION	0.38	0.22	-0.05	Board of Education Policy Benchmark
TOTAL DOMESTIC EQUITY	0.03	0.02	-0.03	RUSSELL 3000
TOTAL WORLD ex-USA	0.02	0.01	0.03	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	-0.01	-0.01	-0.01	MSCI AC WORLD
TOTAL EMERGING MARKETS	0.02	0.00	-0.04	MSCI Emerging Markets
TOTAL INTERNATIONAL FOF	0.00	0.00	0.00	MSCI ACWI Ex US IMI Net
TOTAL PRIVATE EQUITY	-0.08	-0.08	-0.03	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	-0.02	-0.02	-0.01	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE NON-CORE	-0.02	-0.01	0.00	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	-0.01	-0.01	0.00	CPI + 4%
TOTAL US TREASURY SHORT TERM	0.41	0.27	0.01	FTSE USBIG Treasury 1-3 Y Index
TOTAL ACTIVE GOVERNMENT	-0.05	-0.06	0.05	NYC - Treasury Agency Plus Five
TOTAL INVESTMENT GRADE CREDIT	-0.05	-0.04	-0.04	NYC - Investment Grade Credit
TOTAL MORTGAGES	-0.02	0.00	0.02	FTSE MORTGAGE INDEX
TOTAL ETI	0.00	0.00	0.00	ETI Custom Benchmark
TOTAL HIGH YIELD	0.02	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	0.03	0.02	0.00	BBG BARC Gbl Inf-Lk: US TIPS (Dly)
TOTAL CASH	0.11	0.08	-0.02	

Selection Effect - Asset Class Breakdown				
	<u>Quarter</u>	<u>FYTD</u>	<u>3 Years</u>	<u>Benchmark</u>
TOTAL BOARD OF EDUCATION	0.26	0.30	0.78	Board of Education Policy Benchmark
TOTAL DOMESTIC EQUITY	0.12	0.06	0.14	RUSSELL 3000
TOTAL WORLD ex-USA	0.30	0.34	0.48	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	0.12	0.13	0.07	MSCI AC WORLD
TOTAL EMERGING MARKETS	-0.05	-0.09	-0.13	MSCI Emerging Markets
TOTAL INTERNATIONAL FOF	0.02	0.01	0.01	MSCI ACWI Ex US IMI Net
TOTAL PRIVATE EQUITY	-0.34	-0.33	-0.10	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	0.03	-0.07	0.02	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE NON-CORE	0.04	0.13	0.18	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	0.00	0.07	0.11	CPI + 4%
TOTAL US TREASURY SHORT TERM	0.00	0.00	0.00	FTSE USBIG Treasury 1-3 Y Index
TOTAL ACTIVE GOVERNMENT	0.03	0.05	0.01	NYC - Treasury Agency Plus Five
TOTAL INVESTMENT GRADE CREDIT	-0.04	-0.03	0.00	NYC - Investment Grade Credit
TOTAL MORTGAGES	-0.04	-0.04	-0.01	FTSE MORTGAGE INDEX
TOTAL ETI	0.00	0.01	0.01	ETI Custom Benchmark
TOTAL HIGH YIELD	0.02	0.03	0.00	High Yield Custom Benchmark
TOTAL BANK LOANS	0.02	0.02	0.00	Credit Suisse Lev Loan Index
TOTAL TIPS MANAGERS	0.00	0.00	0.00	BBG BARC Gbl Inf-Lk: US TIPS (Dly)
TOTAL CASH	0.01	0.01	0.00	

Total Domestic Equity Asset Allocations: March 31, 2020



	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL DOMESTIC EQUITY	\$1.8	29.5

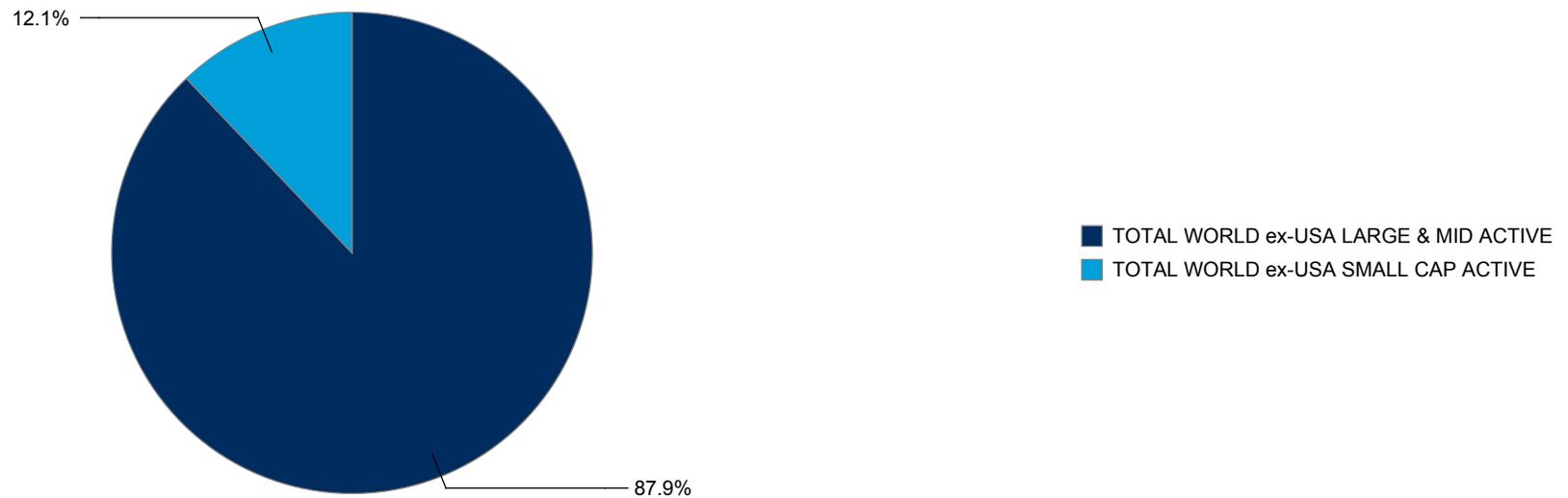


	<u>Policy Weight</u>	<u>Actual Weight</u>	<u>Under/Over Weight</u>	<u>Quarterly Returns</u>		
				<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL SMALL CAP ACTIVE	3.9	3.7	(0.2)	(23.0)	(30.6)	7.6
TOTAL MID CAP ACTIVE	7.0	7.6	0.6	(24.1)	(27.1)	2.9
TOTAL SMALL CAP PASSIVE	2.6	2.4	(0.2)	(35.6)	(30.6)	(5.0)
TOTAL RUSSELL 1000 PASSIVE	68.0	63.7	(4.3)	(20.2)	(20.2)	0.1
TOTAL RUSSELL TOP 200 PASSIVE	18.0	22.1	4.1	(17.6)	(17.7)	0.1
TOTAL EMERGING MANAGERS	0.5	0.5	(0.0)	(30.6)	(30.6)	0.0

World ex-USA Equity Asset Allocation: March 31, 2020



	<u>Market Value (Millions)</u>	<u>% of Plan</u>
TOTAL WORLD ex-USA	\$671.0	10.9

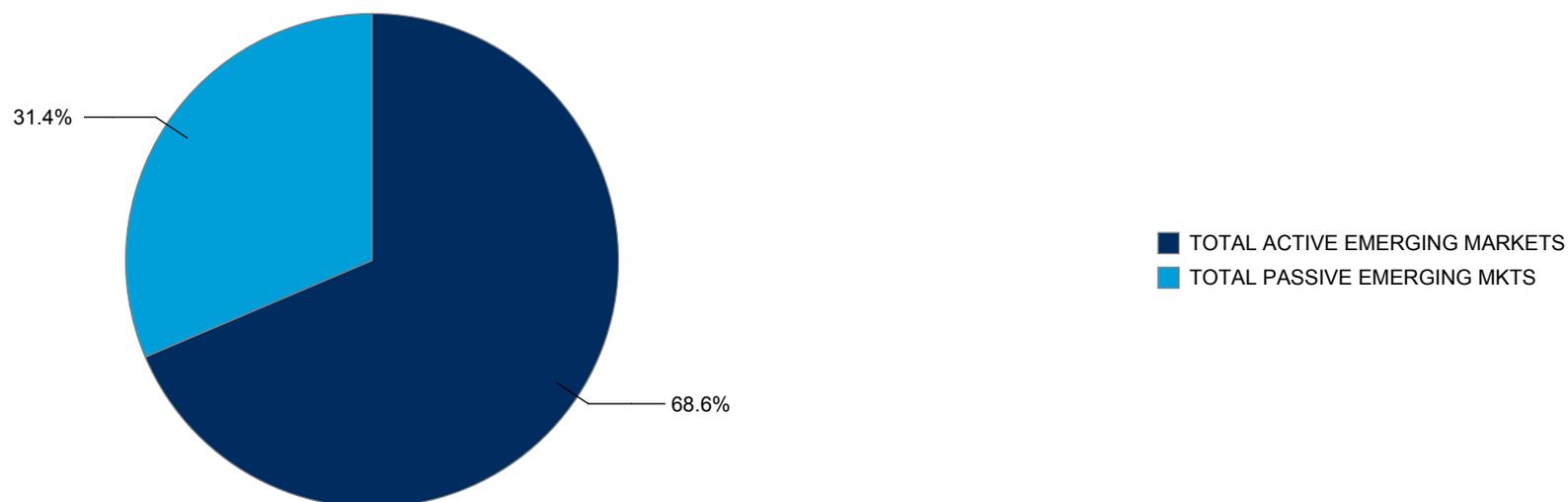


	<u>Asset Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL WORLD ex-USA LARGE & MID ACTIVE	87.93	(20.82)	(23.26)	2.45
TOTAL WORLD ex-USA SMALL CAP ACTIVE	12.07	(26.34)	(27.73)	1.39
TOTAL WORLD ex-USA	100.00	(21.53)	(24.00)	2.48

Emerging Markets Equity Asset Allocation: March 31, 2020



	<u>Market Value (Millions)</u>	<u>% of Plan</u>
TOTAL EMERGING MARKETS	\$361.6	5.9

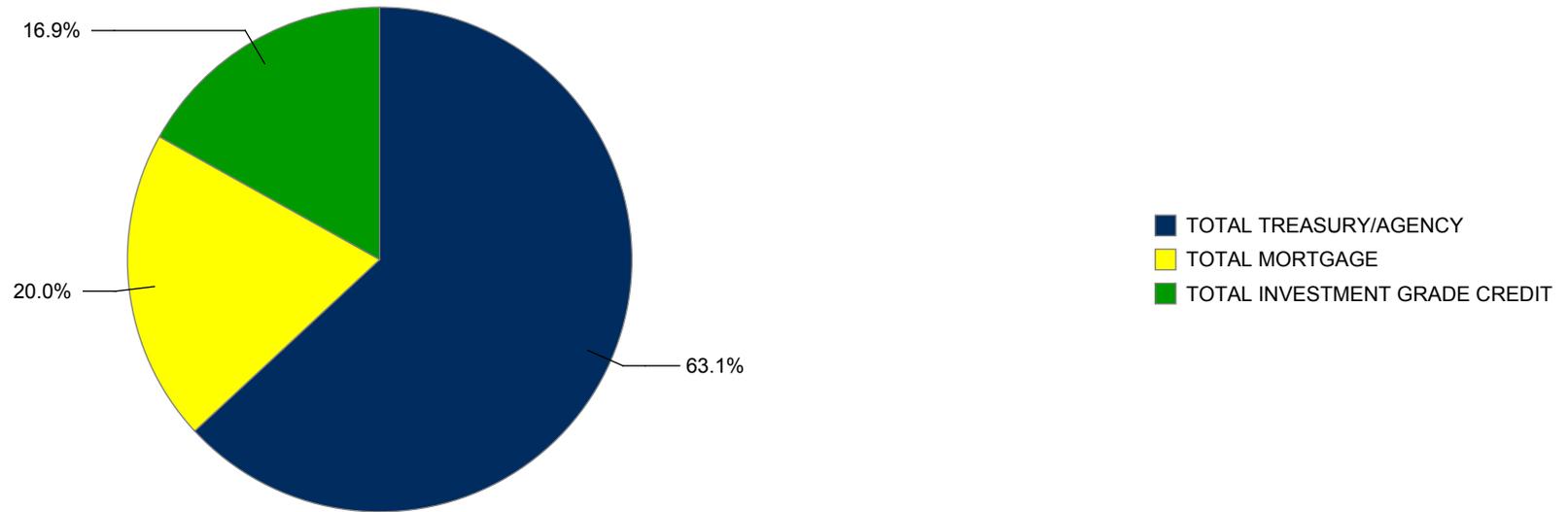


	<u>Asset Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL ACTIVE EMERGING MARKETS	68.57	(24.49)	(23.60)	(0.90)
TOTAL PASSIVE EMERGING MARKETS	31.43	(23.64)	(23.60)	(0.04)
TOTAL EMERGING MARKETS	100.00	(24.23)	(23.60)	(0.63)

Structured Fixed Income Asset Allocation: March 31, 2020



	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL STRUCTURED + ETI	\$1.4	22.5

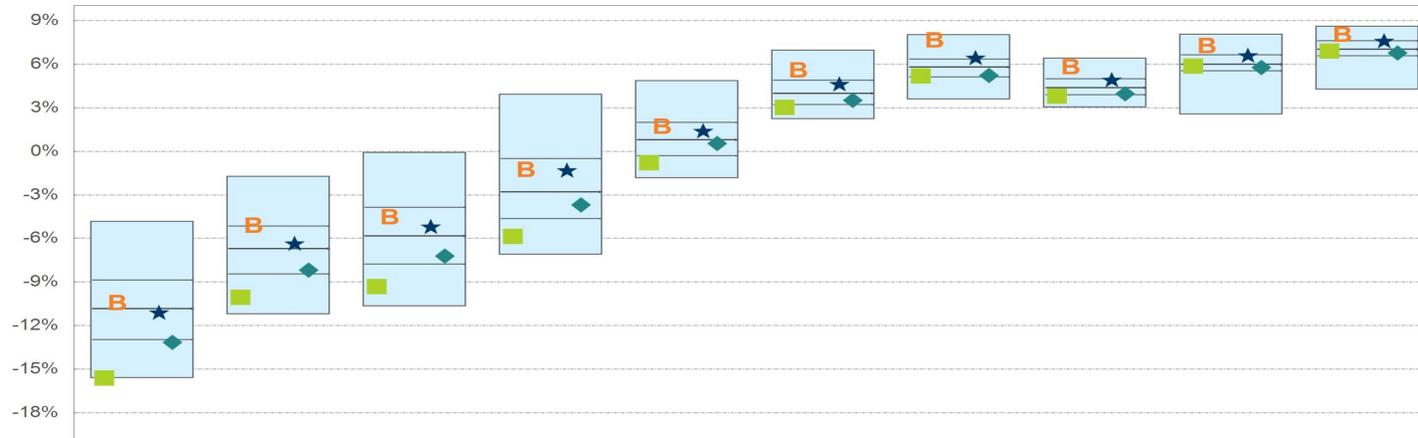


	<u>Policy Weight</u>	<u>Asset Weight</u>	<u>Under/Over Weight</u>	<u>Quarterly Returns</u>		
				<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL TREASURY/AGENCY	61.54	63.13	1.59	11.19	13.78	(2.60)
TOTAL MORTGAGE	19.23	19.96	0.73	2.42	3.27	(0.85)
TOTAL INVESTMENT GRADE CREDIT	19.23	16.91	(2.32)	(4.04)	(3.01)	(1.03)



City of New York Performance Comparison

Total Returns of Master Trusts - Public : Plans > \$1 Billion
Cumulative Periods Ending : March 31, 2020

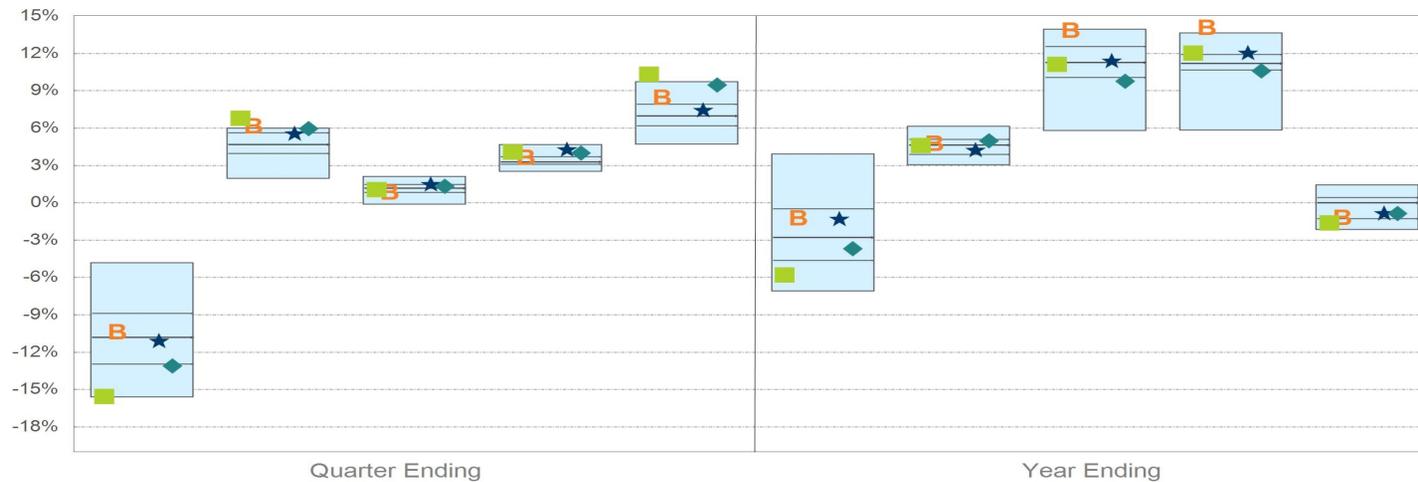


Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	-4.83	-1.73	-0.06	3.93	4.85	6.95	8.04	6.40	8.07	8.60
25th	-8.87	-5.13	-3.86	-0.50	1.99	4.89	6.35	5.01	6.63	7.60
50th	-10.82	-6.71	-5.82	-2.79	0.81	4.00	5.81	4.37	5.98	7.03
75th	-12.96	-8.45	-7.77	-4.62	-0.31	3.21	5.12	3.90	5.53	6.57
95th	-15.59	-11.20	-10.65	-7.07	-1.83	2.25	3.61	3.07	2.58	4.29
No. Of Obs	50	47	46	45	45	45	45	45	45	42
B Total System - BOE	-10.60 (47)	-5.28 (29)	-4.68 (36)	-1.42 (34)	1.53 (31)	5.42 (11)	7.48 (9)	5.64 (13)	7.10 (13)	7.86 (16)
★ Board of Ed Policy Ben	-11.29 (54)	-6.55 (43)	-5.37 (43)	-1.50 (34)	1.23 (34)	4.45 (38)	6.25 (25)	4.75 (31)	6.40 (27)	7.41 (35)
■ Public Mkt Equiv 25	-15.79 (95)	-10.26 (92)	-9.50 (92)	-6.04 (91)	-0.98 (87)	2.83 (89)	5.00 (77)	3.60 (84)	5.68 (65)	6.72 (67)
◆ Public Mkt Equiv 35	-13.35 (79)	-8.39 (72)	-7.39 (68)	-3.90 (63)	0.33 (59)	3.31 (72)	5.03 (77)	3.78 (79)	5.57 (72)	6.58 (72)



City of New York Performance Comparison

Total Returns of Master Trusts - Public : Plans > \$1 Billion
Consecutive Time Periods: March 31, 2020



Percentile Rankings	Mar 20	Dec 19	Sep 19	Jun 19	Mar 19	Mar 20	Mar 19	Mar 18	Mar 17	Mar 16
5th	-4.83	6.01	2.12	4.68	9.72	3.93	6.14	13.93	13.64	1.45
25th	-8.87	5.61	1.47	3.70	7.91	-0.50	5.11	12.56	11.92	0.41
50th	-10.82	4.67	1.19	3.27	6.98	-2.79	4.63	11.28	11.21	0.01
75th	-12.96	3.97	0.84	3.09	6.17	-4.62	3.89	10.05	10.66	-1.29
95th	-15.59	1.95	-0.11	2.54	4.70	-7.07	3.05	5.79	5.84	-2.15
No. Of Obs	50	47	49	49	50	45	50	50	50	50
B Total System - BOE	-10.60 (47)	5.95 (7)	0.64 (79)	3.42 (33)	8.24 (23)	-1.42 (34)	4.57 (52)	13.66 (9)	13.87 (1)	-1.39 (79)
★ Board of Ed Policy Ben	-11.29 (54)	5.34 (29)	1.27 (41)	4.09 (11)	7.23 (41)	-1.50 (34)	4.04 (68)	11.21 (52)	11.83 (29)	-1.04 (66)
■ Public Mkt Equiv 25	-15.79 (95)	6.57 (1)	0.84 (75)	3.83 (16)	10.10 (3)	-6.04 (91)	4.36 (58)	10.89 (56)	11.78 (31)	-1.83 (91)
◆ Public Mkt Equiv 35	-13.35 (79)	5.72 (17)	1.09 (58)	3.77 (19)	9.22 (11)	-3.90 (63)	4.74 (41)	9.55 (85)	10.36 (77)	-1.08 (68)

Wilshire Trust Universe Comparison Service® (TUCS®)

Actual Fees Incurred

Through March 31, 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 March 31, 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)								

Actual Fees Incurred

Through March 31, 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

Actual Fees Incurred

Through March 31, 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.

Securities Lending Income

Through March 31, 2020



**NYC BOARD OF EDUCATION RETIREMENT SYSTEM
SECURITIES LENDING INCOME
March 31, 2020**

	U. S. FIXED INCOME	U. S. EQUITY	INTERNATIONAL EQUITY	TOTAL
1989	70,000	-	-	70,000
1990	79,000	-	-	79,000
1991	111,000	0	-	111,000
1992	122,000	11,000	0	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 (3 months)	100,185	98,196	122,685	321,066
Since Inception	<u>10,886,364</u>	<u>17,199,837</u>	<u>12,607,442</u>	<u>40,693,642</u>

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

Appendix A

Consolidated Performance Report

Consolidated Performance Report

Through March 31, 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	6,141	100.00	(10.60)	(4.68)	(10.60)	7.23	19.37	(2.81)	19.09	(1.42)	5.42	5.64	7.86	8.45	07/01/1987
BERS - ESTIMATED INVESTMENT FEES			(0.05)	(0.17)	(0.05)	(0.24)	(0.31)	(0.17)	(0.27)	(0.24)	(0.23)	(0.24)			
EST MANAGEMENT FEES - PUBLIC MARKET (ACCRUAL)			(0.02)	(0.06)	(0.02)	(0.11)	(0.12)	(0.10)	(0.11)	(0.10)	(0.10)	(0.11)			
EST MANAGEMENT FEES - ALTERNATIVE MARKETS (CASH)			(0.03)	(0.11)	(0.03)	(0.13)	(0.19)	(0.07)	(0.16)	(0.14)	(0.13)	(0.13)			
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
BERS-TOTAL PORTFOLIO - NET MGR			(10.65)	(4.85)	(10.65)	6.99	19.06	(2.98)	18.82	(1.66)	5.19	5.40			
BOARD OF EDUCATION POLICY BENCHMARK			(11.29)	(5.37)	(11.29)	7.30	19.07	(3.19)	16.63	(1.50)	4.46	4.75	7.41		
EXCESS RETURN			0.64	0.52	0.64	(0.31)	(0.01)	0.21	2.18	(0.16)	0.74	0.65	0.45		
EQUITY RETURN DETAIL															
18 BERS-TOTAL EQUITY (INCLUDES ALTERNATIVES) - GROSS	4,020	65.46	(16.08)	(9.01)	(16.08)	7.00	24.41	(4.41)	25.58	(5.74)	5.41	6.16	9.05	8.65	08/01/1993
ESTIMATED INVESTMENT FEES			(0.06)	(0.21)	(0.06)	(0.31)	(0.42)	(0.21)	(0.34)	(0.30)	(0.29)	(0.30)			
EST MANAGEMENT FEES			(0.06)	(0.21)	(0.06)	(0.31)	(0.42)	(0.21)	(0.34)	(0.30)	(0.29)	(0.30)			
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
BERS-TOTAL EQUITY (INCLUDES ALTERNATIVES) - NET MGR			(16.14)	(9.22)	(16.14)	6.69	23.99	(4.61)	25.24	(6.04)	5.12	5.86			
26 BERS-TOTAL EQUITY - GROSS	2,996	48.79	(21.06)	(13.96)	(21.06)	5.40	28.11	(9.30)	27.41	(10.83)	2.70	4.28	8.02	6.97	04/01/2004
ESTIMATED INVESTMENT FEES			(0.03)	(0.08)	(0.03)	(0.17)	(0.20)	(0.11)	(0.15)	(0.14)	(0.14)	(0.15)			
EST MANAGEMENT FEES			(0.03)	(0.08)	(0.03)	(0.17)	(0.20)	(0.11)	(0.15)	(0.14)	(0.14)	(0.15)			
EST INCENTIVE FEES															
EST OTHER FEES															
EST FEE OFFSETS															
BERS-TOTAL EQUITY - NET MGR			(21.09)	(14.04)	(21.09)	5.23	27.91	(9.41)	27.26	(10.97)	2.57	4.13			
34 BERS-TOTAL DOMESTIC EQUITY - GROSS	1,811	29.49	(20.56)	(12.50)	(20.56)	9.03	31.14	(4.61)	21.47	(8.87)	4.51	5.98	10.27	9.17	09/01/1991
ESTIMATED INVESTMENT FEES			(0.01)	(0.02)	(0.01)	(0.09)	(0.10)	(0.03)	(0.04)	(0.08)	(0.05)	(0.07)			
BERS-TOTAL DOMESTIC EQUITY - NET MGR			(20.57)	(12.52)	(20.57)	8.95	31.04	(4.64)	21.43	(8.95)	4.46	5.90			
RUSSELL 3000 (DAILY)			(20.90)	(12.70)	(20.90)	8.98	31.02	(5.24)	21.13	(9.13)	4.00	5.77	10.15	9.01	
EXCESS RETURN			0.33	0.18	0.33	(0.04)	0.02	0.60	0.29	0.18	0.46	0.13	0.12	0.16	
44 BERS-TOTAL SMALL CAP - GROSS	110	1.79	(28.52)	(23.47)	(28.52)	(3.27)	25.20	(10.89)	14.47	(21.90)	(3.78)	0.10	7.05	4.80	04/01/2004
ESTIMATED INVESTMENT FEES			(0.03)	(0.04)	(0.03)	(0.00)	(0.00)	(0.00)	(0.00)	(0.04)	(0.02)	(0.02)			
BERS-TOTAL SMALL CAP - NET MGR			(28.55)	(23.51)	(28.55)	(3.27)	25.20	(10.90)	14.47	(21.94)	(3.80)	0.07			
RUSSELL 2000 (DAILY)			(30.61)	(25.55)	(30.61)	(3.31)	25.52	(11.01)	14.65	(23.99)	(4.64)	(0.25)	6.90	5.69	
EXCESS RETURN			2.07	2.04	2.07	0.04	(0.33)	0.12	(0.18)	2.05	0.84	0.32	0.15	(0.89)	
54 BERS-TOTAL MID CAP - GROSS	138	2.25	(24.08)	(19.67)	(24.08)	9.09	33.87	(7.09)	25.33	(15.58)	3.68	5.30		10.82	10/01/2010
ESTIMATED INVESTMENT FEES			(0.06)	(0.18)	(0.06)	(0.97)	(1.19)	(0.28)	(0.27)	(0.75)	(0.51)	(0.52)			
BERS-TOTAL MID CAP - NET MGR			(24.14)	(19.85)	(24.14)	8.11	32.68	(7.37)	25.06	(16.33)	3.17	4.78			
RUSSELL MIDCAP (DAILY)			(27.07)	(21.54)	(27.07)	7.83	30.54	(9.06)	18.52	(18.31)	(0.81)	1.85		9.01	
EXCESS RETURN			2.93	1.70	2.93	0.29	2.14	1.69	6.54	1.98	3.98	2.93		1.81	
64 BERS-TOTAL RUSSELL 1000 - GROSS	1,154	18.79	(20.17)	(11.73)	(20.17)	10.17	31.35			(7.99)				0.47	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			(20.17)	(11.73)	(20.17)	10.17	31.35			(7.99)				0.47	
RUSSELL 1000 (DAILY)			(20.22)	(11.77)	(20.22)	10.02	31.43			(8.03)				0.26	
EXCESS RETURN			0.05	0.04	0.05	0.15	(0.07)			0.03				0.20	
74 BERS-TOTAL RUSSELL TOP 200 PASSIVE - GROSS	400	6.52	(17.62)	(7.97)	(17.62)	10.91	31.67			(4.03)				2.80	05/01/2018
ESTIMATED INVESTMENT FEES			(0.00)	(0.00)	(0.00)	(0.01)	(0.00)			(0.01)				(0.01)	
BERS-TOTAL RUSSELL TOP 200 PASSIVE - NET MGR			(17.62)	(7.98)	(17.62)	10.90	31.66			(4.04)				2.79	
RUSSELL TOP 200 INDEX (DAILY)			(17.70)	(8.03)	(17.70)	10.89	31.75			(4.08)				2.76	
EXCESS RETURN			0.07	0.06	0.07	0.01	(0.09)			0.05				0.03	

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EQUITY RETURN DETAIL																
86	BERS-TOTAL EMERGING MANAGER - GROSS	9	0.14	(30.49)	(26.30)	(30.49)	0.43	23.94	(7.81)		(24.74)			(5.14)	05/01/2017	
	ESTIMATED INVESTMENT FEES			(0.09)	(0.28)	(0.09)	(0.50)	(0.62)	(0.46)		(0.37)			(0.42)		
	BERS-TOTAL EMERGING MANAGER - NET MGR			(30.58)	(26.57)	(30.58)	(0.06)	23.33	(8.27)		(25.12)			(5.56)		
	RUSSELL 2000 (DAILY)			(30.61)	(25.55)	(30.61)	(3.31)	25.52	(11.01)		(23.99)			(5.12)		
	EXCESS RETURN			0.03	(1.02)	0.03	3.24	(2.20)	2.74		(1.13)			(0.43)		
96	BERS-TOTAL WORLD ex-USA EQUITY - GROSS	671	10.93	(21.48)	(15.48)	(21.48)	(0.87)	26.47	(14.67)	35.49	(12.58)	1.40	2.21	5.13	6.86	11/01/1992
	ESTIMATED INVESTMENT FEES			(0.05)	(0.16)	(0.05)	(0.24)	(0.31)	(0.21)	(0.32)	(0.22)	(0.25)	(0.25)			
	BERS-TOTAL WORLD ex-USA EQUITY - NET MGR			(21.53)	(15.63)	(21.53)	(1.11)	26.16	(14.88)	35.18	(12.79)	1.15	1.96			
	NYC DEVELOPED EQUITY BENCHMARK			(24.00)	(18.34)	(24.00)	0.16	22.91	(14.68)	25.65	(15.48)	(2.26)	(0.89)	2.58	5.07	
	EXCESS RETURN			2.48	2.71	2.48	(1.27)	3.26	(0.19)	9.53	2.69	3.41	2.85	2.55	1.79	
106	BERS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - GROSS	590	9.61	(20.77)	(14.85)	(20.77)	(0.04)	27.08	(13.90)	35.81	(11.77)	2.25	2.39	2.17	11/01/2013	
	ESTIMATED INVESTMENT FEES			(0.05)	(0.15)	(0.05)	(0.23)	(0.29)	(0.20)	(0.31)	(0.21)	(0.24)	(0.24)	(0.24)		
	BERS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - NET MGR			(20.82)	(15.00)	(20.82)	(0.27)	26.79	(14.09)	35.51	(11.97)	2.01	2.15	1.93		
	NYC CUSTOM WORLD EX-USA LG & MID ACT INDEX			(23.26)	(18.00)	(23.26)	1.29	22.49	(14.09)	25.18	(14.89)	(1.95)	(0.70)	(0.24)		
	EXCESS RETURN			2.45	3.00	2.45	(1.56)	4.30	(0.00)	10.32	2.92	3.96	2.85	2.17		
126	BERS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - GROSS	81	1.32	(26.28)	(19.78)	(26.28)	(5.96)	22.61	(18.96)	38.82	(18.04)	(2.62)	2.43	3.99	05/01/2013	
	ESTIMATED INVESTMENT FEES			(0.06)	(0.20)	(0.06)	(0.31)	(0.41)	(0.27)	(0.44)	(0.28)	(0.32)	(0.34)			
	BERS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - NET MGR			(26.34)	(19.98)	(26.34)	(6.27)	22.21	(19.22)	38.38	(18.32)	(2.94)	2.09			
	S&P EPAC SMALL CAP USD NET			(27.73)	(20.55)	(27.73)	(6.38)	23.71	(18.58)	33.47	(18.67)	(3.48)	0.27	2.49		
	EXCESS RETURN			1.39	0.57	1.39	0.10	(1.50)	(0.65)	4.91	0.35	0.54	1.82	1.50		
136	BERS-TOTAL EMERGING MARKETS - GROSS	362	5.89	(24.18)	(19.28)	(24.18)	(0.32)	16.90	(16.14)	39.93	(18.50)	(3.04)	(0.41)	1.24	6.34	11/01/1997
	ESTIMATED INVESTMENT FEES			(0.05)	(0.14)	(0.05)	(0.24)	(0.27)	(0.20)	(0.38)	(0.19)	(0.24)	(0.28)			
	BERS-TOTAL EMERGING MARKETS - NET MGR			(24.23)	(19.43)	(24.23)	(0.56)	16.63	(16.34)	39.55	(18.70)	(3.28)	(0.70)			
	MSCI EMERGING MARKETS			(23.60)	(18.18)	(23.60)	1.21	18.42	(14.57)	37.28	(17.69)	(1.62)	(0.37)	0.68		
	EXCESS RETURN			(0.63)	(1.25)	(0.63)	(1.76)	(1.79)	(1.77)	2.27	(1.01)	(1.66)	(0.33)	0.56		
146	BERS-TOTAL ACTIVE EMERGING MARKETS - GROSS	248	4.04	(24.43)	(19.78)	(24.43)	(1.09)	16.09	(16.99)	40.92	(18.91)	(3.73)	(0.64)	1.10	6.32	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.07)	(0.20)	(0.07)	(0.33)	(0.38)	(0.28)	(0.47)	(0.27)	(0.32)	(0.34)			
	BERS-TOTAL ACTIVE EMERGING MARKETS - NET MGR			(24.49)	(19.98)	(24.49)	(1.42)	15.71	(17.27)	40.45	(19.18)	(4.05)	(0.98)			
	MSCI EMERGING MARKETS			(23.60)	(18.18)	(23.60)	1.21	18.42	(14.57)	37.28	(17.69)	(1.62)	(0.37)	0.68	6.11	
	EXCESS RETURN			(0.90)	(1.80)	(0.90)	(2.63)	(2.71)	(2.70)	3.16	(1.50)	(2.43)	(0.62)	0.41	0.21	
156	BERS-TOTAL PASSIVE EMERGING MARKETS - GROSS	114	1.85	(23.63)	(18.15)	(23.63)	1.44	18.79	(14.45)	37.41	(17.57)	(1.53)		1.95	12/01/2016	
	ESTIMATED INVESTMENT FEES			(0.00)	(0.01)	(0.00)	(0.02)	(0.03)	0.01	(0.15)	(0.02)	(0.04)	(0.04)	(0.04)		
	BERS-TOTAL PASSIVE EMERGING MARKETS - NET MGR			(23.64)	(18.16)	(23.64)	1.42	18.76	(14.45)	37.26	(17.59)	(1.57)		1.91		
	MSCI EMERGING MARKETS			(23.60)	(18.18)	(23.60)	1.21	18.42	(14.57)	37.28	(17.69)	(1.62)		1.86		
	EXCESS RETURN			(0.04)	0.02	(0.04)	0.21	0.34	0.12	(0.02)	0.10	0.06		0.04		
166	BERS-TOTAL INTERNATIONAL FUND OF FUNDS - GROSS	51	0.83	(22.52)	(17.09)	(22.52)	0.69	22.67	(14.23)		(13.67)			(2.12)	05/01/2017	
	ESTIMATED INVESTMENT FEES			(0.07)	(0.21)	(0.07)	(0.34)	(0.42)	(0.30)		(0.29)			(0.34)		
	BERS-TOTAL INTERNATIONAL FUND OF FUNDS - NET MGR			(22.58)	(17.30)	(22.58)	0.34	22.25	(14.53)		(13.96)			(2.46)		
	MSCI ACWI EX USA IMI NET			(24.11)	(18.55)	(24.11)	0.26	21.63	(14.76)		(16.32)			(3.15)		
	EXCESS RETURN			1.52	1.25	1.52	0.08	0.62	0.23		2.35			0.70		
176	BERS-TOTAL GLOBAL EQUITY - GROSS	102	1.66	(14.38)	(6.61)	(14.38)	9.85	36.70		(0.40)				0.93	06/01/2018	
	ESTIMATED INVESTMENT FEES			(0.12)	(0.39)	(0.12)	(0.61)	(0.79)		(0.55)				(0.56)		
	BERS-TOTAL GLOBAL EQUITY - NET MGR			(14.50)	(7.00)	(14.50)	9.24	35.91		(0.95)				0.37		
	MSCI AC WORLD (DAILY CONST)			(21.37)	(14.35)	(21.37)	5.74	26.60		(11.26)				(5.55)		
	EXCESS RETURN			6.87	7.35	6.87	3.50	9.31		10.30				5.92		

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ALTERNATIVE EQUITY RETURN DETAIL																
188	BERS-TOTAL PRIVATE EQUITY (TIME WEIGHTED) - GROSS	483	7.87	4.29	13.31	4.29	16.26	14.11	20.44	19.22	18.67	18.34	16.31	15.43	8.29	07/01/2006
	ESTIMATED INVESTMENT FEES			(0.21)	(0.91)	(0.21)	(1.13)	(1.45)	(0.76)	(1.36)	(1.08)	(1.17)	(1.26)			
	BERS-TOTAL PRIVATE EQUITY (TIME WEIGHTED) - NET MGR			4.08	12.40	4.08	15.13	12.66	19.69	17.86	17.59	17.17	15.05			
	NYC R3000 +3% LAGGED			9.88	17.42	9.88	12.01	6.00	21.06	22.22	34.86	17.97	14.55	17.16	13.17	
	EXCESS RETURN			(5.81)	(5.02)	(5.81)	3.12	6.66	(1.37)	(4.36)	(17.27)	(0.80)	0.50	(1.73)	(4.87)	
198	BERS-TOTAL PRIVATE REAL ESTATE (TIME WEIGHTED) - GROSS	391	6.37	2.47	5.52	2.47	9.92	7.61	11.95	13.57	7.67	11.05	11.48	11.59	12/01/2010	
	ESTIMATED INVESTMENT FEES			(0.14)	(0.51)	(0.14)	(0.59)	(0.71)	(0.56)	(0.83)	(0.74)	(0.68)	(0.72)			
	BERS-TOTAL PRIVATE REAL ESTATE (TIME WEIGHTED) - NET MGR			2.33	5.00	2.33	9.33	6.90	11.40	12.74	6.92	10.36	10.76			
	NCREIF NFI-ODCE NET + 100 BP			1.00	3.91	1.00	6.51	5.43	8.43	7.72	4.97	6.91	8.55	11.22		
	EXCESS RETURN			1.33	1.10	1.33	2.82	1.47	2.97	5.01	1.96	3.46	2.21	0.37		
208	BERS-TOTAL INFRASTRUCTURE (TIME WEIGHTED) - GROSS	149	2.43	1.36	9.64	1.36	12.55	13.63	14.77	24.82	12.89	17.10	13.62	14.76	12/01/2013	
	ESTIMATED INVESTMENT FEES			(0.32)	(1.33)	(0.32)	(1.11)	(1.45)	(1.06)	(2.74)	(1.62)	(1.64)	(1.62)	(2.94)		
	BERS-TOTAL INFRASTRUCTURE (TIME WEIGHTED) - NET MGR			1.04	8.31	1.04	11.44	12.17	13.70	22.08	11.27	15.46	12.00	11.82		
	CPI + 4%			0.79	4.01	0.79	5.75	6.38	6.02	6.20	5.58	5.99	5.87	5.61		
	EXCESS RETURN			0.25	4.30	0.25	5.69	5.79	7.69	15.88	5.69	9.48	6.13	6.22		

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FIXED INCOME RETURN DETAIL																
220	BERS-TOTAL FIXED INCOME - GROSS	2,121	34.53	1.84	4.56	1.84	7.20	9.46	(0.33)	4.30	7.72	4.57	3.73	4.68	7.67	02/01/1980
	ESTIMATED INVESTMENT FEES			(0.02)	(0.07)	(0.02)	(0.10)	(0.10)	(0.09)	(0.12)	(0.10)	(0.10)	(0.11)			
	EST MANAGEMENT FEES			(0.02)	(0.07)	(0.02)	(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			1.82	4.48	1.82	7.10	9.36	(0.42)	4.18	7.62	4.47	3.62			
228	BERS-FIXED INCOME (ex ALTERNATIVE CREDIT & CASH) - GROSS	1,695	27.60	5.62	8.15	5.62	7.60	9.00	(0.45)	3.93	11.78	5.62	4.02	4.29	11/01/2013	
	ESTIMATED INVESTMENT FEES			(0.01)	(0.03)	(0.01)	(0.04)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)	(0.06)	(0.06)	
	EST MANAGEMENT FEES			(0.01)	(0.03)	(0.01)	(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			5.61	8.11	5.61	7.56	8.96	(0.49)	3.88	11.73	5.57	3.97	4.23		
236	BERS-TOTAL STRUCTURED FIXED INCOME - GROSS	1,338	21.79	6.62	9.22	6.62	8.23	9.16	(0.36)	4.19	13.00	6.13	4.33	5.04	7.58	01/01/1985
	ESTIMATED INVESTMENT FEES			(0.01)	(0.04)	(0.01)	(0.04)	(0.05)	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)			
	BERS-TOTAL STRUCTURED FIXED INCOME - NET MGR			6.61	9.18	6.61	8.19	9.12	(0.40)	4.14	12.95	6.08	4.28			
	NYC CUSTOM STRUCTURED INDEX-BERS			7.66	10.48	7.66	9.47	10.27	(0.21)	4.48	14.81	7.01				
	EXCESS RETURN			(1.05)	(1.30)	(1.05)	(1.28)	(1.15)	(0.19)	(0.34)	(1.86)	(0.92)				
246	BERS-TOTAL GOVERNMENT - GROSS	872	14.19	11.20	13.27	11.20	8.02	8.16	(0.23)	2.82	17.26	6.98	4.13	5.63	7.33	05/01/1987
	ESTIMATED INVESTMENT FEES			(0.01)	(0.03)	(0.01)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.04)			
	BERS-TOTAL GOVERNMENT - NET MGR			11.19	13.25	11.19	7.99	8.13	(0.25)	2.79	17.22	6.95	4.10			
	NYC - TREASURY AGENCY PLUS FIVE			13.78	16.22	13.78	10.38	10.40	(0.05)	4.66	21.52	9.13	5.43	6.32		
	EXCESS RETURN			(2.60)	(2.97)	(2.60)	(2.39)	(2.27)	(0.20)	(1.86)	(4.30)	(2.18)	(1.33)	(0.69)		
256	BERS-TOTAL MORTGAGE - GROSS	233	3.79	2.16	4.42	2.16	6.67	6.97	1.04	3.11	6.79	4.18	3.20	3.73	5.65	08/01/1993
	ESTIMATED INVESTMENT FEES			(0.01)	(0.03)	(0.01)	(0.05)	(0.05)	(0.04)	(0.05)	(0.05)	(0.04)	(0.04)			
	BERS-TOTAL MORTGAGE - NET MGR			2.15	4.39	2.15	6.63	6.93	1.00	3.06	6.75	4.13	3.16			
	FTSE MORTGAGE INDEX			3.27	5.63	3.27	6.39	6.68	1.01	2.47	7.83	4.32	3.07	3.38	5.23	
	EXCESS RETURN			(1.13)	(1.24)	(1.13)	0.24	0.25	(0.01)	0.59	(1.09)	(0.19)	0.09	0.35	0.42	
266	BERS-TOTAL INVESTMENT GRADE CREDIT - GROSS	233	3.80	(4.02)	0.28	(4.02)	10.23	14.68	(2.55)	6.70	4.62	4.06	3.41	5.07	7.06	04/01/1987
	ESTIMATED INVESTMENT FEES			(0.02)	(0.06)	(0.02)	(0.09)	(0.10)	(0.08)	(0.08)	(0.09)	(0.09)	(0.08)			
	BERS-TOTAL INVESTMENT GRADE CREDIT - NET MGR			(4.04)	0.22	(4.04)	10.14	14.58	(2.63)	6.61	4.54	3.97	3.33			
	NYC - INVESTMENT GRADE CREDIT			(3.01)	0.91	(3.01)	10.13	13.40	(1.90)	6.04	5.02	4.11	3.28	4.67		
	EXCESS RETURN			(1.03)	(0.69)	(1.03)	0.01	1.18	(0.73)	0.58	(0.48)	(0.14)	0.05	0.40		
276	BERS-TOTAL TIPS - GROSS	314	5.11	1.77	3.94	1.77	4.84	8.45	(1.28)	3.05	6.91	3.50	2.71	3.61	3.94	06/01/2005
	ESTIMATED INVESTMENT FEES			(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)			
	BERS-TOTAL TIPS - NET MGR			1.77	3.94	1.77	4.83	8.44	(1.29)	3.04	6.90	3.50	2.71			
	BBG BARC GBL INF-LK: US TIPS (DLY)			1.69	3.87	1.69	4.84	8.43	(1.26)	3.01	6.85	3.46	2.67	3.48	3.79	
	EXCESS RETURN			0.08	0.06	0.08	(0.00)	0.02	(0.03)	0.04	0.05	0.04	0.04	0.13	0.15	
286	BERS-TOTAL TARGETED INVESTMENTS (NO CASH) - GROSS	43	0.70	3.91	6.99	3.91	9.46	9.87	1.08	4.37	11.00	6.13	4.60	4.65	6.83	12/01/1984
	ESTIMATED INVESTMENT FEES			(0.04)	(0.14)	(0.04)	(0.25)	(0.21)	(0.25)	(0.26)	(0.20)	(0.23)	(0.26)	(0.31)	(0.13)	
	BERS-TOTAL TARGETED INVESTMENTS (NO CASH) - NET MGR			3.87	6.85	3.87	9.21	9.66	0.83	4.11	10.80	5.90	4.35	4.34	6.71	
	BERS CUSTOM BENCHMARK (NO CASH)			3.23	5.69	3.23	7.20	7.67	0.85	3.19	8.43	4.72	3.40	3.74		
	EXCESS RETURN			0.64	1.17	0.64	2.01	1.99	(0.02)	0.92	2.37	1.18	0.95	0.60		

Consolidated Performance Report

Through March 31, 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	266	4.32	(12.08)	(8.43)	(12.08)	7.41	14.08	(1.64)	7.17	(6.27)	0.96	2.60	5.91	5.40	08/01/1997
ESTIMATED INVESTMENT FEES			(0.07)	(0.22)	(0.07)	(0.34)	(0.37)	(0.30)	(0.36)	(0.30)	(0.32)	(0.33)			
BERS-TOTAL HIGH YIELD - NET MGR			(12.15)	(8.65)	(12.15)	7.07	13.71	(1.94)	6.81	(6.56)	0.63	2.27			
HIGH YIELD CUSTOM BENCHMARK			(12.68)	(9.21)	(12.68)	7.48	14.32	(2.34)	7.03	(6.94)	0.67	2.41	5.34	5.37	
EXCESS RETURN			0.53	0.56	0.53	(0.40)	(0.61)	0.40	(0.22)	0.37	(0.03)	(0.14)	0.57	0.03	
308 BERS- TOTAL BANK LOANS - GROSS	111	1.81	(12.19)	(9.47)	(12.19)	3.32	8.17	0.71	4.81	(8.54)	(0.29)	1.40		2.54	12/01/2012
ESTIMATED INVESTMENT FEES			(0.07)	(0.22)	(0.07)	(0.34)	(0.36)	(0.33)	(0.34)	(0.30)	(0.33)	(0.34)			
BERS-TOTAL BANK LOANS - NET MGR			(12.26)	(9.70)	(12.26)	2.98	7.82	0.38	4.47	(8.84)	(0.62)	1.06			
CSFB LEVERAGED LOAN INDEX			(13.19)	(10.92)	(13.19)	4.15	8.17	1.14	4.25	(9.51)	(0.73)	1.21		2.32	
EXCESS RETURN			0.93	1.22	0.93	(1.17)	(0.36)	(0.76)	0.22	0.67	0.11	(0.14)		0.23	
CASH SUMMARY															
320 Short Term BERS - GROSS	49	0.80	0.33	1.32	0.33	2.10	2.00	1.92	1.10	1.71	1.71	1.22	0.83	1.99	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			0.33	1.32	0.33	2.10	2.00	1.92	1.10	1.71	1.71	1.22	0.83		
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 March 31, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
EQUITY SUMMARY										
US EQUITY										
Wasatch-US SCG	67	1.09	(23.03)		(23.03)					
RUSSELL 2000 GROWTH DAILY			(25.76)		(25.76)					
Excess			2.73		2.73					
BlackRock US SCG R2000	0	0.00	(25.76)	(20.79)	(25.76)	28.39	(9.14)	22.26	11.29	(1.30)
RUSSELL 2000 GROWTH DAILY			(25.76)	(20.76)	(25.76)	28.48	(9.31)	22.17	11.32	(1.38)
Excess			0.01	(0.04)	0.01	(0.09)	0.17	0.09	(0.02)	0.08
BlackRock US SCV R2000	43	0.70	(35.73)	(30.55)	(35.73)	22.60	(12.79)	7.34	31.71	(7.38)
RUSSELL 2000 VALUE DAILY			(35.66)	(30.60)	(35.66)	22.39	(12.86)	7.84	31.74	(7.47)
Excess			(0.06)	0.05	(0.06)	0.20	0.08	(0.49)	(0.03)	0.09
Wellington US MCC	138	2.25	(24.14)	(19.85)	(24.14)	32.68	(7.37)	25.06	12.28	1.76
S&P MID CAP 400			(29.70)	(24.80)	(29.70)	26.20	(11.08)	16.24	20.74	(2.18)
Excess			5.56	4.95	5.56	6.48	3.71	8.82	(8.45)	3.94
BlackRock US LMC R1000 Core	1,154	18.79	(20.17)	(11.73)	(20.17)	31.36				
RUSSELL 1000 (DAILY)			(20.22)	(11.77)	(20.22)	31.43				
Excess			0.05	0.04	0.05	(0.07)				
SSGA US LMC Top 200 Core	400	6.52	(17.62)	(7.98)	(17.62)	31.66				
RUSSELL TOP 200 INDEX (DAILY)			(17.70)	(8.03)	(17.70)	31.75				
Excess			0.07	0.06	0.07	(0.09)				
FUND OF FUNDS										
BERS-TOTAL FUNDS OF FUNDS	9	0.14	(30.58)	(26.57)	(30.58)	23.33	(8.27)			
RUSSELL 2000 (DAILY)			(30.61)	(25.55)	(30.61)	25.52	(11.01)			
Excess			0.03	(1.02)	0.03	(2.20)	2.74			

Public Markets Manager Performance Detail



Net Returns Through March 31, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
BERS-TOTAL LEGATO	9	0.14	(30.58)	(26.57)	(30.58)	23.33	(8.27)			
RUSSELL 2000 (DAILY)			(30.61)	(25.55)	(30.61)	25.52	(11.01)			
Excess			0.03	(1.02)	0.03	(2.20)	2.74			
NON - US EQUITY										
Sprucegrove WorldxUS LMCC	252	4.10	(28.59)	(25.81)	(28.59)	17.55	(13.67)	27.15	11.14	(9.56)
NYC Developed Value Benchmark			(23.26)	(18.00)	(23.26)	22.49	(14.09)	22.77	5.02	(5.68)
Excess			(5.33)	(7.81)	(5.33)	(4.94)	0.42	4.38	6.12	(3.87)
Baillie Gifford WorldxUS LMCC	338	5.50	(13.84)	(4.62)	(13.84)	36.64	(15.35)	44.17	0.70	(3.81)
NYC Developed Growth Benchmark			(23.26)	(18.00)	(23.26)	22.49	(14.09)	27.77	(3.04)	4.09
Excess			9.42	13.39	9.42	14.15	(1.26)	16.40	3.74	(7.90)
Acadian WorldxUS SCC	60	0.98	(25.51)	(19.37)	(25.51)	21.82	(19.22)	38.38	6.41	8.68
S&P EPAC Small Cap USD NET			(27.73)	(20.55)	(27.73)	23.71	(18.58)	33.47	1.34	8.58
Excess			2.22	1.18	2.22	(1.89)	(0.65)	4.91	5.07	0.09
Algert EAFE SCC	21	0.34	(28.66)	(21.71)	(28.66)					
MSCI EAFE SMALL CAP NET (DAILY)			(27.52)	(19.52)	(27.52)					
Excess			(1.14)	(2.18)	(1.14)					
EMERGING MARKETS										
Acadian EM	248	4.04	(24.49)	(19.98)	(24.49)	15.71	(17.27)	40.45	12.74	(15.14)
MSCI EMERGING MARKETS			(23.60)	(18.18)	(23.60)	18.42	(14.57)	37.28	11.19	(14.92)
Excess			(0.90)	(1.80)	(0.90)	(2.71)	(2.70)	3.16	1.55	(0.22)
BlackRock MSCI EM Core	114	1.85	(23.64)	(18.16)	(23.64)	18.76	(14.45)	37.25		
MSCI EMERGING MARKETS			(23.60)	(18.18)	(23.60)	18.42	(14.57)	37.28		
Excess			(0.04)	0.02	(0.04)	0.34	0.12	(0.03)		

Public Markets Manager Performance Detail



Net Returns Through March 31, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
INTERNATIONAL FOF										
BERS-TOTAL INTERNATIONAL FOF	51	0.83	(22.58)	(17.30)	(22.58)	22.25	(14.53)			
MSCI ACWI ex USA IMI Net			(24.11)	(18.55)	(24.11)	21.63	(14.76)			
Excess			1.52	1.25	1.52	0.62	0.23			
BERS-TOTAL INTERNATIONAL FIS										
BERS-TOTAL INTERNATIONAL FIS	51	0.83	(22.58)	(17.30)	(22.58)	22.25	(14.53)			
MSCI ACWI ex USA IMI Net			(24.11)	(18.55)	(24.11)	21.63	(14.76)			
Excess			1.52	1.25	1.52	0.62	0.23			
GLOBAL EQUITY										
Morgan Stanley-Global	51	0.83	(11.64)	(4.39)	(11.64)	38.03				
MSCI AC WORLD (Daily Const)			(21.37)	(14.35)	(21.37)	26.60				
Excess			9.73	9.96	9.73	11.44				
Fiera-Global	51	0.83	(17.17)	(9.47)	(17.17)	33.97				
MSCI World Index			(21.05)	(13.84)	(21.05)	27.67				
Excess			3.88	4.37	3.88	6.30				
FIXED INCOME SUMMARY										
STRUCTURED FIXED INCOME										
BlackRock Mortgages	233	3.79	2.15	4.39	2.15	6.93	1.00	3.06	2.32	1.73
FTSE MORTGAGE INDEX			3.27	5.63	3.27	6.68	1.01	2.47	1.59	1.56
Excess			(1.13)	(1.24)	(1.13)	0.25	(0.01)	0.59	0.73	0.17
Prudential Credit	125	2.04	(3.89)	0.10	(3.89)	13.63	(1.95)	6.21	5.86	(0.22)
NYC - Investment Grade Credit			(3.01)	0.91	(3.01)	13.40	(1.90)	6.04	5.56	(0.65)
Excess			(0.87)	(0.81)	(0.87)	0.24	(0.05)	0.17	0.30	0.43
Taplin Credit	108	1.76	(4.21)	0.35	(4.21)	15.70	(3.42)	7.18	8.02	(3.01)
NYC - Investment Grade Credit			(3.01)	0.91	(3.01)	13.40	(1.90)	6.04	5.56	(0.65)
Excess			(1.20)	(0.55)	(1.20)	2.30	(1.52)	1.14	2.46	(2.36)

Public Markets Manager Performance Detail

Net Returns Through March 31, 2020



	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
SSGA LI Treasury	629	10.24	14.09	16.74	14.09	10.57	(0.18)	4.92	1.23	0.45
NYC - Treasury Agency Plus Five			13.78	16.22	13.78	10.40	(0.05)	4.66	1.21	0.72
Excess			0.31	0.52	0.31	0.17	(0.12)	0.27	0.01	(0.27)
SSGA IT Treasury 1-10Y	6	0.09	5.30	6.56	5.30					
FTSE USBIG Treasury/Agency 1-10 y			5.13	6.37	5.13					
Excess			0.17	0.19	0.17					
SSGA ST Treasury 1-3Y	237	3.86	2.74	3.86	2.74	3.56	1.51	0.45		
FTSE USBIG Treasury 1-3 Y Index			2.67	3.79	2.67	3.56	1.56	0.42		
Excess			0.07	0.08	0.07	0.00	(0.05)	0.03		
HIGH YIELD										
Mackay Shields High Yield	135	2.20	(11.12)	(7.44)	(11.12)	13.85				
BBG BARC US HY - 2% Issr Cap			(12.68)	(9.21)	(12.68)	14.32				
Excess			1.57	1.76	1.57	(0.47)				
Nomura High Yield	130	2.12	(13.20)	(9.87)	(13.20)	13.74				
BBG BARC US HY - 2% Issr Cap			(12.68)	(9.21)	(12.68)	14.32				
Excess			(0.52)	(0.66)	(0.52)	(0.58)				
BANK LOANS										
Barings Bank Loans	111	1.81	(12.26)	(9.70)	(12.26)	7.82	0.38	4.47	8.48	0.12
CSFB LEVERAGED LOAN INDEX			(13.19)	(10.92)	(13.19)	8.17	1.14	4.25	9.88	(0.38)
Excess			0.93	1.22	0.93	(0.36)	(0.76)	0.22	(1.39)	0.51
TIPS										
SSGA TIPS	314	5.11	1.77	3.94	1.77	8.44	(1.29)	3.04	4.78	
BBG BARC Gbl Inf-Lk: US TIPS (Dly)			1.69	3.87	1.69	8.43	(1.26)	3.01	4.68	
Excess			0.08	0.06	0.08	0.02	(0.03)	0.04	0.09	

Public Markets Manager Performance Detail

Net Returns Through March 31, 2020



	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
ECONOMICALLY TARGETED INVESTMENTS										
RBC Access MBS	10	0.17	3.09	5.40	3.09	7.21	0.49	2.64	1.61	1.83
Access RBC Benchmark			3.77	5.60	3.77	6.05	1.17	1.96	1.52	1.40
Excess			(0.69)	(0.20)	(0.69)	1.16	(0.69)	0.69	0.09	0.43
AFL-CIO Housing Investment Trust	18	0.29	3.43	5.14	3.43	7.78	0.16	3.17	1.94	1.13
BBG BARC Agg (Dly)			3.15	5.68	3.15	8.72	0.01	3.54	2.65	0.55
Excess			0.28	(0.53)	0.28	(0.94)	0.15	(0.38)	(0.71)	0.58
CPC Construction Facility	2	0.03	(0.41)	5.44	(0.41)	8.12	4.14	6.05	(3.95)	12.90
CPC CONST BENCHMARK			0.83	2.77	0.83	4.09	3.99	3.34	3.03	2.90
Excess			(1.24)	2.67	(1.24)	4.03	0.15	2.72	(6.99)	10.01
BOA PPAR FNMA	1	0.02	6.19	10.36	6.19	13.54	2.33	5.21	4.07	42.03
FNMA Plus 85bps			3.46	6.49	3.46	7.80	1.86	3.61	2.38	2.50
Excess			2.73	3.87	2.73	5.74	0.47	1.60	1.69	39.53
Citibank PPAR FNMA	3	0.04	6.15	15.79	6.15	19.71	2.63	5.26	3.71	6.69
FNMA Plus 85bps			3.46	6.49	3.46	7.80	1.86	3.61	2.38	2.50
Excess			2.69	9.30	2.69	11.91	0.77	1.65	1.33	4.20
Citibank PPAR GNMA	0	0.01	5.05	5.06	5.05	5.33	1.90	3.10	2.78	5.08
GNMA Plus 65bps			3.41	5.62	3.41	6.73	1.63	2.53	2.28	2.02
Excess			1.64	(0.56)	1.64	(1.41)	0.27	0.57	0.50	3.06
CFSB PPAR GNMA	0	0.00	4.78	5.12	4.78	5.91	0.99	3.83	3.21	5.90
GNMA Plus 65bps			3.41	5.62	3.41	6.73	1.63	2.53	2.28	2.02
Excess			1.37	(0.50)	1.37	(0.82)	(0.65)	1.30	0.93	3.88
CPC PPAR FNMA	1	0.02	5.95	9.07	5.95	13.18	2.31	5.06	6.15	8.96
FNMA Plus 85bps			3.46	6.49	3.46	7.80	1.86	3.61	2.38	2.50
Excess			2.50	2.58	2.50	5.38	0.45	1.45	3.77	6.46

Public Markets Manager Performance Detail

Net Returns Through March 31, 2020



	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
JPMC PPAR FNMA	4	0.06	6.14	10.40	6.14	14.68	1.68	9.96	7.94	6.18
FNMA Plus 85bps			3.46	6.49	3.46	7.80	1.86	3.61	2.38	2.50
Excess			2.69	3.91	2.69	6.88	(0.18)	6.35	5.56	3.68
LIIF PPAR FNMA	2	0.04	6.22	13.10	6.22	16.35	2.27	9.55	5.03	6.29
FNMA Plus 85bps			3.46	6.49	3.46	7.80	1.86	3.61	2.38	2.50
Excess			2.76	6.61	2.76	8.55	0.41	5.94	2.65	3.79
LIIF PPAR GNMA	0	0.00	3.62	4.79	3.62	5.54	2.53	2.52	3.88	3.92
GNMA Plus 65bps			3.41	5.62	3.41	6.73	1.63	2.53	2.28	2.02
Excess			0.21	(0.83)	0.21	(1.19)	0.89	(0.01)	1.61	1.91
LISC PPAR FNMA	0	0.00	10.71	15.92	10.71	14.95				
FNMA Plus 85bps			3.46	6.49	3.46	7.80				
Excess			7.25	9.43	7.25	7.15				
NCBCI PPAR FNMA	0	0.00	4.67	5.67	4.67	4.08	2.00	1.75	3.46	4.97
FNMA Plus 85bps			3.46	6.49	3.46	7.80	1.86	3.61	2.38	2.50
Excess			1.21	(0.82)	1.21	(3.72)	0.15	(1.86)	1.07	2.47
NCBCI PPAR GNMA	0	0.00	4.40	4.18	4.40	3.69	1.23	3.01	3.51	5.53
GNMA Plus 65bps			3.41	5.62	3.41	6.73	1.63	2.53	2.28	2.02
Excess			0.99	(1.44)	0.99	(3.04)	(0.41)	0.48	1.23	3.52
Wells Fargo PPAR FNMA	0	0.00	6.10	10.96	6.10	21.71				
FNMA Plus 85bps			3.46	6.49	3.46	7.80				
Excess			2.64	4.47	2.64	13.91				
CASH										
Short Term BERS	49	0.80	0.33	1.32	0.33	2.00	1.92	1.10	0.55	0.39
ICE BofA US 3-Month Treasury Bill			0.57	1.61	0.57	2.28	1.87	0.86	0.33	0.05
Excess			(0.25)	(0.29)	(0.25)	(0.28)	0.05	0.24	0.23	0.34

Public Markets Manager Performance Detail



Net Returns Through March 31, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
Cash Account	0	0.00								
Securities Lending	0	0.00								
KKR Cash Account	0	0.00								

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

Appendix C

Alternative Assets Manager Performance Detail

Alternative Assets Manager Performance Detail

Through December 31, 2019



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
TOTAL PRIVATE EQUITY		912,922,380	569,663,564	359,857,147	477,338,671	1.47	12.2%
TOTAL ACTIVE							
Mesirow Financial Private Equity Partnership Fund III, L.P.	2005	57,000,000	55,100,648	82,966,991	10,279,908	1.69	8.3%
Mesirow Financial Private Equity Partnership Fund IV, L.P.	2006	25,000,000	22,973,154	30,772,289	10,314,904	1.79	10.4%
New York Fairview Private Equity Fund, L.P.	2006	19,000,000	17,700,307	18,706,659	5,124,275	1.35	5.4%
Mesirow Financial Private Equity Partnership Fund V, L.P.	2009	45,000,000	39,622,655	43,432,954	36,498,191	2.02	16.4%
<i>NYCBERS - 2012 Emerging Manager Program</i>	<u>2012</u>	<u>14,650,000</u>	<u>14,421,870</u>	<u>3,838,174</u>	<u>16,465,176</u>	<u>1.41</u>	<u>9.4%</u>
Platinum Equity Capital Partners III, L.P.	2012	15,000,000	14,911,803	19,419,586	7,910,233	1.83	36.6%
Warburg Pincus Private Equity XI, L.P.	2012	25,000,000	25,676,063	26,181,185	15,667,370	1.63	13.1%
Apollo Investment Fund VIII, L.P.	2013	20,000,000	18,487,597	8,633,092	17,239,007	1.40	12.3%
Carlyle Partners VI, L.P.	2013	20,000,000	21,182,128	9,128,766	18,908,012	1.32	10.0%
Crestview Partners III (Co-Investment B), L.P.	2013	5,000,000	5,082,311	250,760	5,415,130	1.11	4.3%
Crestview Partners III, L.P.	2013	15,000,000	10,560,347	6,396,772	7,503,320	1.32	12.0%
Landmark Equity Partners XV, L.P.	2013	19,000,000	14,085,798	10,362,768	7,488,703	1.27	11.6%
Landmark Equity Partners XV, L.P. - Side Car	2013	6,000,000	5,091,686	3,460,967	3,794,429	1.42	14.2%
ASF VI NYC Co-Invest, L.P.	2014	5,000,000	4,012,664	3,676,357	2,022,075	1.42	12.6%
ASF VI, L.P.	2014	15,000,000	11,677,991	8,954,145	7,708,824	1.43	12.5%
Carlyle Partners VI, L.P. - Side Car	2014	2,200,000	1,600,688	92,959	1,460,313	0.97	-0.8%
CVC Capital Partners VI, L.P.	2014	20,533,102	17,736,127	8,548,731	18,462,831	1.52	16.9%
Lexington Capital Partners VIII, L.P.	2014	20,000,000	17,387,018	8,785,810	14,259,048	1.33	17.1%
Vista Equity Partners Fund V, L.P.	2014	25,000,000	29,097,455	30,048,486	24,827,207	1.89	21.8%
American Securities Partners VII, L.P.	2015	8,000,000	6,552,454	1,044,323	5,236,957	0.96	-2.2%
ASF VII B NYC Co-Invest, L.P.	2015	6,000,000	3,477,479	937,376	4,590,567	1.59	29.1%
ASF VII, L.P.	2015	10,000,000	4,497,637	1,138,686	4,824,034	1.33	17.1%
Bridgepoint Europe V Co-Invest	2015	2,910,434	2,702,670	1,186,252	3,875,296	1.87	31.7%
Bridgepoint Europe V, L.P.	2015	8,570,983	8,344,591	2,959,961	8,108,922	1.33	14.1%
Centerbridge Capital Partners III, L.P.	2015	2,500,000	2,051,580	852,951	1,959,704	1.37	16.4%
EQT VII, L.P.	2015	16,723,030	16,697,269	7,707,906	17,324,184	1.50	21.0%
<i>NYCBERS - 2015 Emerging Manager Program</i>	<u>2015</u>	<u>37,250,000</u>	<u>16,703,942</u>	<u>2,674,416</u>	<u>17,854,385</u>	<u>1.23</u>	<u>30.9%</u>
Siris Partners III, L.P.	2015	3,500,000	3,121,809	1,622,243	2,386,201	1.28	12.4%
Warburg Pincus Private Equity XII, L.P.	2015	21,500,000	20,232,598	2,107,945	23,729,335	1.28	13.9%
Welsh, Carson, Anderson & Stowe XII, L.P.	2015	10,000,000	8,961,878	4,170,831	10,519,000	1.64	26.1%

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

Alternative Assets Manager Performance Detail

Through December 31, 2019



	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	16,516,852	1.40	29.5%
Platinum Equity Capital Partners IV, L.P.	2016	11,500,000	10,045,983	2,938,305	10,238,311	1.31	22.5%
Vista Equity Partners Fund VI, L.P.	2016	16,000,000	17,651,982	4,164,227	20,704,705	1.41	17.6%
Ares Corporate Opportunities Fund V, L.P.	2017	10,000,000	8,609,892	939,327	8,546,275	1.10	8.7%
BC European Capital X Metro Co-Investment L.P.	2017	4,590,654	4,235,129	-	5,463,448	1.29	21.1%
BC European Capital X, L.P.	2017	11,364,625	7,313,080	147,577	9,027,086	1.25	19.0%
Green Equity Investors VII, L.P.	2017	10,000,000	6,977,289	89,576	8,409,260	1.22	13.4%
KKR Americas Fund XII, L.P.	2017	16,000,000	7,664,350	105,486	8,755,752	1.16	12.7%
Palladium Equity Partners V, L.P.	2017	10,000,000	2,764,406	33,399	2,318,321	0.85	-23.7%
Warburg Pincus Financial Sector, L.P.	2017	13,000,000	7,198,750	686,355	7,058,402	1.08	8.8%
Apollo Investment Fund IX, L.P.	2018	32,000,000	5,814,704	59,683	5,196,880	0.90	N/A
Bridgepoint Europe VI Co-Invest	2018	3,506,640	580,710	-	609,871	1.05	N/A
Bridgepoint Europe VI, L.P.	2018	14,000,752	2,068,759	-	2,257,413	1.09	N/A
CVC Capital Partners VII, L.P.	2018	19,021,594	9,519,115	80,100	10,164,342	1.08	N/A
EQT VIII SCSP	2018	12,866,119	5,684,536	158,561	6,099,508	1.10	N/A
EQT VIII SCSP (Co-Invest)	2018	4,677,781	2,550,824	-	2,736,898	1.07	N/A
Platinum Equity Capital Partners IV, L.P. (Co-Invest)	2018	1,500,000	1,050,000	-	1,443,798	1.38	N/A
Platinum Equity Small Cap Fund, L.P.	2018	10,000,000	1,721,552	25,020	1,061,129	0.63	N/A
Siris Partners IV, L.P.	2018	10,000,000	4,599,281	-	5,386,627	1.17	N/A
Vista Equity Partners Fund VII, L.P.	2018	20,500,000	5,030,614	19,780	4,843,913	0.97	N/A
Apax X, L.P.	2019	12,500,000	-	-	(86,793)	N/A	N/A
ASF VIII B NYC Co-Invest, L.P.	2019	10,500,000	416,832	-	780,268	1.87	N/A
ASF VIII, L.P.	2019	21,000,000	1,404,927	62	2,115,761	1.51	N/A
Crestview Partners IV (FF), L.P.	2019	2,666,667	-	-	6,840	N/A	N/A
Crestview Partners IV, L.P.	2019	8,000,000	-	-	15,512	N/A	N/A
ICG Strategic Equity Fund III LP	2019	13,340,000	-	-	587,427	N/A	N/A
KKR European Fund V, L.P. - USD	2019	9,950,000	-	-	(39,677)	N/A	N/A
LCP IX Co-Invest Partners B, L.P.	2019	4,125,000	-	-	(4,481)	N/A	N/A
Lexington Capital Partners IX, L.P.	2019	12,375,000	876,402	-	1,556,476	1.78	N/A
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>1,651,796</u>	<u>-</u>	<u>1,807,055</u>	<u>1.09</u>	<u>N/A</u>
Warburg Pincus Global Growth, L.P.	2019	15,000,000	2,401,325	7,500	2,194,326	0.92	N/A
WCAS XIII, L.P.	2019	10,000,000	73,353	-	(190,376)	N/A	N/A

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

Alternative Assets Manager Performance Detail

Through December 31, 2019



	Vintage Year	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
TOTAL PRIVATE REAL ESTATE			567,910,553	477,202,790	264,808,952	388,369,843	1.37	10.9%
TOTAL PRIVATE REAL ESTATE								
LaSalle Property Fund	2010	Core Portfolio	38,600,000	38,600,000	10,866,905	50,788,986	1.60	9.9%
UBS Trumbull Property Fund	2011	Core Portfolio	41,400,000	63,686,007	65,908,508	35,453,433	1.59	8.0%
NYC Asset Investor #2	2013	Core Portfolio	11,000,000	11,187,179	4,748,101	8,334,034	1.17	4.2%
MetLife Core Property Fund	2014	Core Portfolio	15,000,000	15,000,000	3,453,695	19,324,225	1.52	9.4%
USAA Eagle Real Estate Fund	2015	Core Portfolio	18,000,000	18,193,247	1,218,611	20,234,217	1.18	7.5%
Artemis Co-Investment	2016	Core Portfolio	11,000,000	12,622,943	4,847,086	10,701,047	1.23	16.2%
Brookfield Premier Real Estate Partners	2016	Core Portfolio	10,000,000	11,214,128	1,214,128	13,533,167	1.32	11.0%
Exeter Core Industrial Club Fund II	2016	Core Portfolio	10,000,000	9,610,000	1,333,065	10,616,833	1.24	13.3%
Jamestown Premier Property Fund	2016	Core Portfolio	6,246,307	5,999,229	2,650,385	4,660,985	1.22	8.0%
Lion Industrial Trust	2017	Core Portfolio	18,000,000	19,673,924	1,673,923	24,397,333	1.33	15.1%
Almanac Realty Securities VIII	2018	Core Portfolio	10,500,000	1,071,409	75,964	892,082	0.90	NM
Almanac Realty Securities VIII (Sidecar II)	2018	Core Portfolio	7,000,000	713,851	26,516	740,264	1.07	NM
Artemis Income and Growth Fund	2018	Core Portfolio	10,000,000	1,651,666	42	1,658,396	1.00	NM
Heitman Core Real Estate Debt Income Trust	2018	Core Portfolio	10,000,000	10,616,846	616,846	10,715,641	1.07	NM
Exeter Core Industrial Fund III	2019	Core Portfolio	12,700,000	-	-	(33,405)	-	NM
Harrison Street Core Property Fund	2019	Core Portfolio	10,000,000	10,030,566	30,566	10,157,468	1.02	NM
Harrison Street Core Property Fund Co-Investment	2019	Core Portfolio	5,000,000	3,190,114	35,125	3,220,379	1.02	NM
Franklin Templeton Private Real Estate Fund	2011	Non-Core Portfolio	30,000,000	35,872,653	47,036,632	2,286,355	1.37	19.6%
Brookfield Strategic Real Estate Partners	2012	Non-Core Portfolio	10,000,000	11,837,526	17,540,521	5,726,826	1.97	20.5%
Blackstone Real Estate Partners Europe IV L.P. - USD	2013	Non-Core Portfolio	32,500,000	32,285,170	36,207,348	13,116,161	1.53	15.0%
NYC Asset Investor #1	2013	Non-Core Portfolio	10,000,000	11,400,487	5,499,575	8,588,726	1.24	5.4%
NYC Asset Investor #3	2013	Non-Core Portfolio	8,000,000	5,237,704	926,225	6,295,746	1.38	9.8%
Carlyle Realty Partners VII, L.P.	2014	Non-Core Portfolio	25,000,000	22,698,790	20,258,258	11,440,155	1.40	14.5%
H2 Special Opportunities III	2014	Non-Core Portfolio	15,000,000	15,000,000	12,743,645	7,263,089	1.33	11.6%
Blackstone Real Estate Partners VIII L.P.	2015	Non-Core Portfolio	16,500,000	17,317,863	6,535,225	16,730,030	1.34	16.4%
Tristan European Property Investors Special Opp IV	2015	Non-Core Portfolio	11,285,613	9,233,743	1,213,501	10,044,017	1.22	10.6%
DivcoWest Fund V	2016	Non-Core Portfolio	10,000,000	6,501,898	7,180	7,371,191	1.13	8.0%
Exeter Industrial Value Fund IV, L.P.	2016	Non-Core Portfolio	10,000,000	8,500,000	-	9,838,760	1.16	13.2%
H2 Special Opportunities IV	2016	Non-Core Portfolio	10,000,000	4,317,961	81,350	4,697,842	1.11	9.4%
Pramerica Real Estate Capital VI	2016	Non-Core Portfolio	10,564,757	8,196,223	4,394,636	5,225,188	1.17	16.7%
PW Real Estate Fund III	2016	Non-Core Portfolio	11,316,493	7,362,324	2,836,796	10,675,933	1.84	34.5%
Westbrook Real Estate Fund X	2016	Non-Core Portfolio	10,000,000	7,900,850	3,925,719	5,437,680	1.19	13.5%
DRA Growth and Income Fund IX	2017	Non-Core Portfolio	10,000,000	9,731,933	2,604,413	8,731,083	1.16	14.1%
Lone Star Real Estate Fund V, L.P.	2017	Non-Core Portfolio	13,203,999	6,245,131	1,678,593	4,333,407	0.96	-4.5%
NYCRS-KKR CMBS Retention Partners	2017	Non-Core Portfolio	13,000,000	11,621,255	1,573,694	11,825,939	1.15	9.8%
Aermont Capital Real Estate Fund IV	2018	Non-Core Portfolio	10,093,385	1,708,982	-	1,816,291	1.06	NM
Brookfield Strategic Real Estate Partners III, L.P.	2018	Non-Core Portfolio	12,000,000	2,995,499	48,028	3,112,998	1.06	NM
KKR Real Estate Partners Americas II	2018	Non-Core Portfolio	10,000,000	5,581,881	940,571	5,881,763	1.22	NM
Blackstone Real Estate Partners IX L.P.	2019	Non-Core Portfolio	15,000,000	2,593,810	57,574	2,584,600	1.02	NM
GreenOak Asia III	2019	Non-Core Portfolio	10,000,000	-	-	(45,905)	-	NM
Westbrook Real Estate Fund XI	2019	Non-Core Portfolio	10,000,000	-	-	(3,117)	-	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 December 31, 2019



	Vintage Year	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
TOTAL INFRASTRUCTURE		250,635,554	134,689,809	32,007,383	139,183,044	1.28	13.2%
TOTAL INFRASTRUCTURE							
Brookfield Infrastructure Fund II, L.P.	2013	10,000,000	8,332,855	3,281,473	9,711,996	1.56	12.0%
IFM Global Infrastructure Fund	2014	15,000,000	20,027,335	7,421,302	23,629,492	1.55	13.0%
Global Energy & Power Infrastructure Fund II	2014	15,000,000	15,094,733	11,290,176	9,877,866	1.40	28.7%
KKR Global Infrastructure Investors II L.P.	2014	19,000,000	19,615,383	3,739,631	21,523,006	1.29	11.3%
Global Infrastructure Partners III-A/B, L.P.	2016	12,000,000	9,803,914	1,331,238	9,841,600	1.14	7.2%
Brookfield Infrastructure Fund III, L.P.	2016	10,000,000	5,369,199	820,096	5,574,494	1.19	10.0%
Actis Energy 4	2016	10,600,000	7,025,442	1,006,504	8,295,000	1.32	21.8%
EQT Infrastructure III (No.2) SCSp	2017	9,254,703	8,557,554	839,182	9,638,481	1.22	15.8%
ASF VII Infrastructure L.P.	2017	12,000,000	4,668,299	500,370	4,990,271	1.18	20.4%
Axiom Infrastructure North America	2017	12,221,338	12,400,497	1,059,316	12,668,748	1.11	9.6%
NYCRS EIG Energy Partners, L.P.	2017	11,760,000	2,627,097	324,898	2,580,777	1.11	9.0%
NYCRS EIG Energy Partners Co-Investment, L.P.	2018	2,940,000	-	-	-	NM	NM
KKR Global Infrastructure Investors III L.P.	2018	15,600,000	4,567,089	65,534	4,321,112	NM	NM
Global Energy & Power Infrastructure Fund III, L.P.	2018	15,600,000	2,630,307	124,340	2,806,622	NM	NM
Cardinal NR Sidecar Holdings L.P.	2018	1,880,000	1,891,578	202,508	2,129,309	NM	NM
EQT Infrastructure IV (No.2) USD SCSp	2019	18,000,000	3,508,261	-	3,507,760	NM	NM
Ardian Infrastructure Fund V B	2019	14,579,514	664,844	0	570,578	NM	NM
Global Infrastructure Partners IV-A/B, L.P.	2019	22,600,000	307,570	-	(12,036)	NM	NM
Brookfield Infrastructure Fund IV, L.P.	2019	19,000,000	5,597,853	814	5,527,967	NM	NM
EQT Infrastructure IV Co-Investment (Saber)	2019	1,600,000	-	-	-	NM	NM
Brookfield Infrastructure Fund IV (BIF IV): Co-invest	2019	2,000,000	2,000,000	-	2,000,000	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 March 31, 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.

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 14 - 19 - Portfolio Asset Allocation

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

Pages 20 - 22 - Performance Attribution: Total Plan

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

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

The indexes and most recent policy weights are as follows:

U.S. Equity: Russell 3000 * 32.58%

International Developed (EAFE) Markets: MSCI World ex USA IMI Net * 12.02%

International Active – Global Equity: MSCI ACWI * 1.65%

Emerging Markets: MSCI Emerging Markets * 6.79%

International Emerging Managers FOF: MSCI ACWI Ex US IMI Net * 0.90%

Private Equity: Russell 3000 + 300 b.p. per annum * 7.35%

Private Real Estate – Core: NFI - ODCE Net * 3.59%

Private Real Estate – Non Core: NFI - ODCE Net + 200bps * 2.58%

Infrastructure: CPI + 4% * 2.25%

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

Total Active Government: NYC Treasury Agency + 5 * 9.37%

Core Fixed Income: BBG Barc Agg * 0.00%

Progress Fixed: BBG Barc Agg * 0.00%

Mortgage: FTSE Mortgage Index * 3.59%

ETI: ETI Custom Benchmark * 0.65%

Investment Grade Credit: NYC – Investment Grade Credit * 4.24%

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

Through March 31, 2020



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

*TIPS: BBG BARC Gbl Inf-Lk: US TIPS (Dly) * 4.44%*

Page 23 – 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.