

THE CITY OF NEW YORK OFFICE OF THE COMPTROLLER 1 CENTRE STREET NEW YORK, N.Y. 10007-2341

Scott M. Stringer

# **NEW YORK CITY FIRE DEPARTMENT PENSION FUND**

# **COMMON INVESTMENT MEETING**

# **REPORTING & INITIATIVES**

# **DECEMBER 15, 2016**

LOCATION: Office of the New York City Comptroller 1 Centre Street, 10<sup>th</sup> Floor - Northside New York, NY 10007

### NEW YORK CITY FIRE DEPARTMENT PENSION FUND COMMON INVESTMENT MEETING – REPORTING & INITIATIVES DECEMBER 15, 2016 PUBLIC AGENDA MATERIAL

# Performance Reporting: Page Total Fund Performance Overview - Public (Material to be sent under separate cover) ------ ETI Quarterly Report a/o September 30, 2016 ------5 Private Equity Quarterly Report a/o June 30, 2016 ------12 Real Assets Quarterly Report a/o June 30, 2016 ------41

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### **PUBLIC AGENDA MATERIAL**

### **Total Fund Performance Overview – Public**

(Material to be sent under separate cover)

**ETI Quarterly Report** 

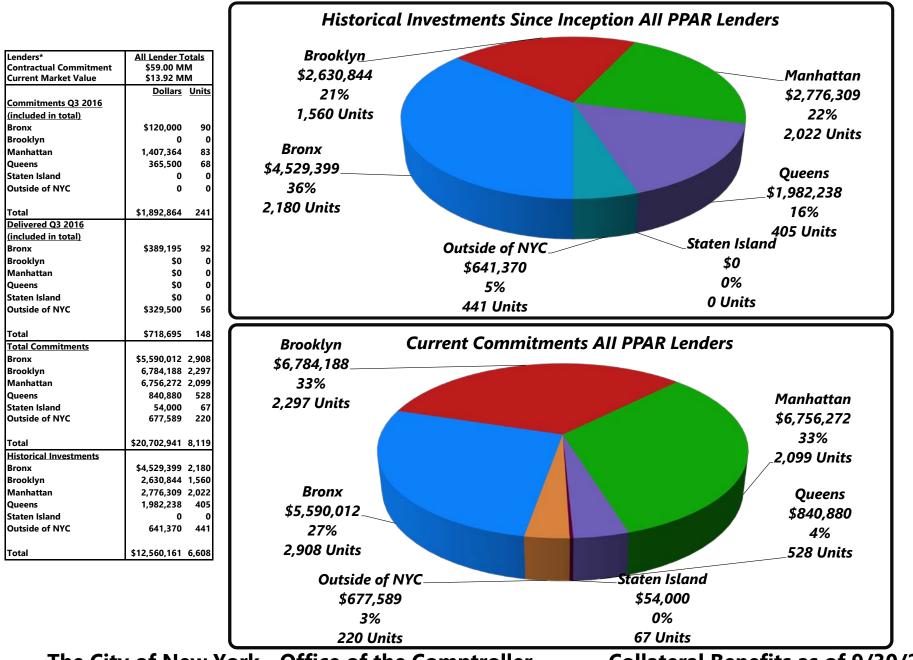
Lenders*	BOA		<u>CCD</u>		CFSB		CPC		JPM		LIIF		NCBCI		NHS	1	WF		LISC		BE	— – – – – – – – – – – – – – – – – – – –
Contractual Commitment	<u>воа</u> \$11.00 ММ		\$6.00 MN	<u>,</u>	\$1.00 M	м	\$6.00 M	м	\$10.00 M	м	\$6.00 MI	л	\$1.00 MI	M I	\$1.00 MM		<u>vvr</u> 53.00 M	м	\$7.00 MN	,	<u>ве</u> \$7.00 MN	л
Current Market Value	\$3.44 MN		\$0.00 Min \$2.56 Min		\$0.44 M		\$0.00 M \$1.91 M		\$3.42 M		\$0.00 MI \$1.83 MI		\$0.31 MI		\$0.00 MM		\$0.00 M		\$0.00 MN		\$0.00 MM	
			Jollars		Dollars		Jollars		5.42 Wi		Dollars				Dollars Unit		ollars		Dollars			
Commitments 03 2016	<u>Dollars</u>	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Units	<u>Dollars</u>	Units	Dollars Unit	<u>s D</u>	ollars	Units	Dollars	Units	<b>Dollars</b>	Units
<u>Commitments Q3 2016</u> (included in total)																						
Bronx	\$0	0	\$0	0	\$0	0	\$0	٥	\$0	٥	\$0	0	\$0	0	\$0	0 \$12	0 000	90	\$0	0	\$0	0
Brooklyn		0	₽0 0	0	پ ۵	0	پ ۵	0	φ0 0	0	پ 0	0	پ ۵	0	Ф	0 312	0,000	0	پ ۵	0	₽ 0	ő
Manhattan	0	0	0	0	0	0	0	0	0	0	ő	0	0	0	•	0	0	0	0	o	1.407.364	83
Queens	0	0	0	0	0	0	0	0	365,500	68	ő	0	0	0	0		0	0	0	ő	1,407,304	03
Staten Island	0	0	0	0	0	0	0	0	303,300	00	0	0	0	0	0		0	0	0	0	0	0
Outside of NYC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
	0	U	U	U	U	U	U	U	U	U	v	U	U U	Ű	U	•	U	U	U	v	U	U
Total	\$0	0	\$0	0	\$0	0	\$0	0	\$365,500	68	\$0	0	\$0	o	\$0	0 \$12	20,000	90	\$0	o	\$1,407,364	83
Delivered Q3 2016									-													
(included in total)																1						
Bronx	\$0	0	\$0	0	\$0	0	\$0	0	\$349,995	72	\$39,200	20	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0
Brooklyn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manhattan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Queens	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	o
Staten Island	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	o
Outside of NYC	0	0	0	0	0	0	0	0	329,500	56	0	0	0	0	0	0	0	0	0	0	0	0
			-	-	-	-	-	-			-	-	-	-	-	-	-	-		-	-	-
Total	\$0	0	\$0	0	\$0	0	\$0	0	\$679,495	128	\$39,200	20	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0
Total Commitments																						
Bronx	\$0	0	\$1,220,816	350	\$0	0	\$635,576	1,324	\$2,489,333	1,035	\$374,800	61	\$0	0	\$0	0 \$12	20,000	90	\$749,487	48	\$0	0
Brooklyn	1,094,663	346	865,218	161	0	0	517,498	897	186,200	127	1,014,397	251	0	0	0	0	0	0	1,648,097	156	1,458,115	359
Manhattan	784,000	100	0	0	0	0	698,072	1,134	480,855	214	1,336,823	275	0	0	0	0 72	23,963	203	1,325,195	90	1,407,364	83
Queens	210,000	54	0	0	0	0	265,380	406	365,500	68	0	0	0	0	0	0	0	0	0	0	0	0
Staten Island	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 5	54,000	67	0	0	0	0
Outside of NYC	208,250	39	316,200	41	0	0	97,300	74	55,839	66	0	0	0	0	0	0	0	0	0	0	0	0
Total	\$2,296,913	539	\$2,402,234	552	\$0	0	\$2.213.826	3.835	\$3,577,727	1.510	\$2.726.020	587	\$0	0	\$0	0 \$89	97.963	360	\$3,722,779	294	\$2,865,479	442
Historical Investments						-								-	1.5					-		
Bronx	\$612,500	60	\$918,720	452	\$0	0	\$286.477	715	\$2,344,745	836	\$366,958	117	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0
Brooklyn	649,915	54	594,348	252	0	0	643,277	919	292,630	90		245	0	0		0	0	0	0	o	0	Ő
Manhattan	0	0	555.249	283	483,542	197	417,368		64,200	119	-	277	271.566	123	0	0	Ō	0	0	o	0	Ő
Queens	1,756,888	239	120,000	54	0	0	15,350	16	90,000	96	· · · · · ·	0	0	0	0	0	Ō	0	0	o	0	Ő
Staten Island	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outside of NYC	0	Ő	0	Ő	0	Ő	311,870	385	329,500	56	-	Ő	0	Ő	•	o	Ő	0	0	ō	0	Ō
																1						
Total	\$3,019,303	353	\$2,188,317				\$1,674,342	3,058	\$3,121,075	1,197	\$1,802,016	639	\$271,566	123	<i>+</i> <del>-</del>	0	\$0	0	\$0	0	\$0	0
*Lenders :	Bank of		Citibank Comn	nunity	Carver Fed	eral	The Commu	unity	JP Morga	in	Low Incom	ne	NCB Capit	al	Neighborhood	V	Nells Far	go	Local Initiati	ves	Bellwethe	r
	America		Developme	ent	Savings Ba	ank	Preservation	Corp	Chase		Investment I	und	Impact		Housing Serv				Support Co	rp	Enterprise	е

#### Public/Private Apartment Rehabilitation Program (PPAR)

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**Collateral Benefits as of 9/30/2016** 

Public/Private Apartment Rehabilitation Program (PPAR)



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AFL-CIO Housing Investment Trust (HIT)

Market Value \$55.41 million\*

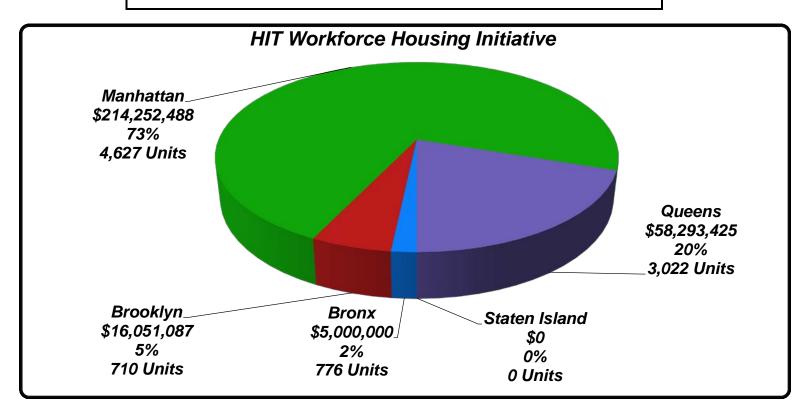
NYC Community Investment Initiative (NYCCII) HIT Multifamily Investments NYCCII Phase II 2006-2013 Multifamily Investments Detail Manhattan **Housing Units** Investments \$174,075,200 Queens Q3 Investments **Since Inception Q3 Housing Units Since Inception** Borough 38% \$17,760,000 \$52,827,900 802 Bronx \$0 0 813 Units 4% Brooklyn 0 103,890,446 0 5,616 1,149 Units Manhattan 0 174,075,200 0 813 Oueens 0 17,760,000 0 1,149 693 Staten Island 0 6,414,554 0 Outside NYC 0 100,000,000 0 137 \$0 0 9,210 Total \$454.968.100 Grand Total NYCCII Phase II 9,210 \$454,968,100 NYCCII Phase I 2002-2005 Dollars Units Member Loans Total All NYC PF's Multifamily Investments \$249,123,500 12,024 n/a n/a HIT Home Investments 348,300,563 n/a 131 446 Staten Island Brooklyn Total NYCCII Phase I 12,024 131 446 \$597,424,063 \$103,890,446 \$6.414.554 **Outside NYC** 1% 23% \$100,000,000 693 Units 5.616 Units 22% NYCCII Phases I & II 137 Units Dollars Units **Total All NYC PF's** Member Loans Multifamily Investments \$704.091.600 21.234 n/a n/a Bronx HIT Home Investments 2.899.899.500 131 446 n/a \$52,827,900 446 Grand Total NYCCII Phases I & II \$3.603.991.100 21.234 131 12% 802 Units

\*Interest is reinvested

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### Collateral Benefits as of 9/30/2016

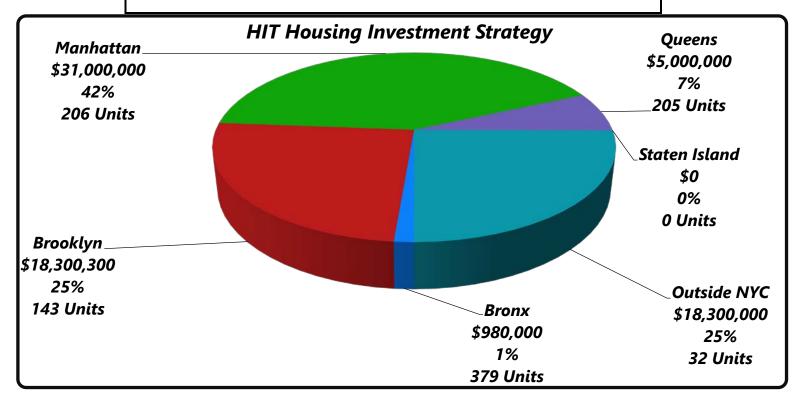
AFL-CIO Housing	g Investment Trust (HI	Т)		
NYC Workforce	Housing Initiative			
Investments Fro	m 2009 Through Q3 20	016		
Workforce Inves	tments Detail			
		<b>Investments</b>		Housing Units
<u>Borough</u>	Q3 Investments	Since Inception	Q3 Housing Units	Since Inception
Bronx	\$0	\$5,000,000	0	776
Brooklyn	0	16,051,087	0	710
Manhattan	0	214,252,488	0	4,627
Queens	0	58,293,425	0	3,022
Staten Island	0	0	0	(
Total	\$0	\$293,597,000	0	9,135



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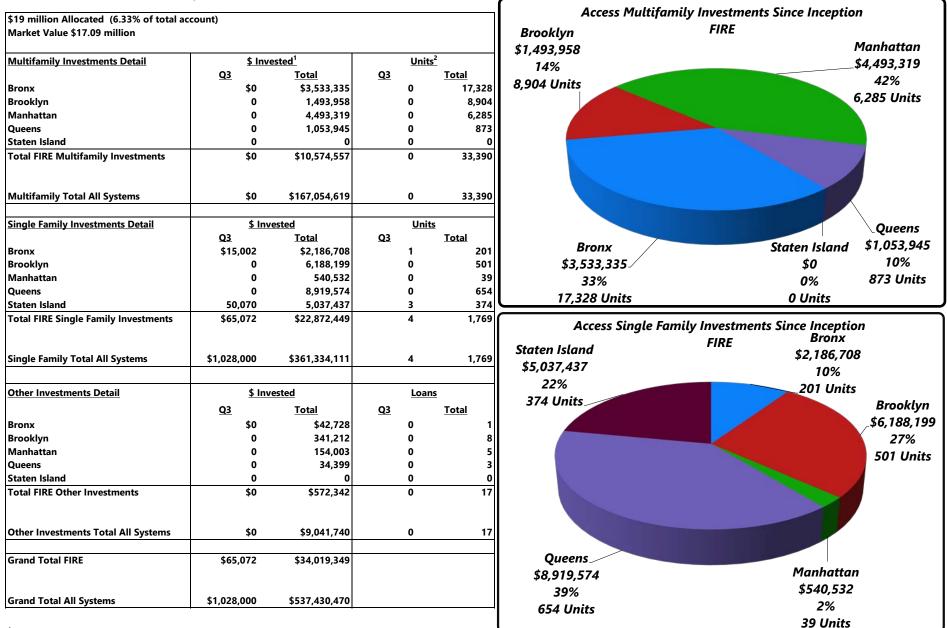
**Collateral Benefits as of 9/30/2016** 

AFL-CIO Housing	j Investment Trust (Hľ	T)		
HIT Housing Invo	estment Strategy			
Investments From	n Q4 2015 Through Q	3 2016		
Housing Investm	ent Strategy Detail			
		Investments		Housing Units
<u>Borough</u>	Q3 Investments	Since Inception	Q3 Housing Units	Since Inception
Bronx	\$0	\$980,000	0	379
Brooklyn	18,300,300	18,300,300	143	143
Manhattan	31,000,000	31,000,000	206	206
Queens	0	5,000,000	0	20
Staten Island	0	0	0	(
Outside NYC	0	18,300,000	0	32
Total	\$49,300,300	\$73,580,300	349	965



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



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

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

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### Collateral Benefits as of 9/30/2016

Private Equity Quarterly Report



# **Private Equity Monitoring Report**

For the period ended June 30, 2016

**Report Prepared For:** 

New York City Fire Department Pension Fund, Subchapter 2





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# I. Executive Summary

The New York City Fire Department Pension Fund, Subchapter 2 ("NYCFDPF") established the Alternative Investment Program (the "Program") on January 1, 1997 on behalf of its beneficiaries to participate in attractive long-term investment opportunities and to provide diversification to its overall pension investment portfolio.

StepStone Group LP ("StepStone") was engaged by NYCFDPF on February 1, 2012 to provide private equity advisory services for prospective investment opportunities and monitoring and reporting services for existing and new investments.

Since inception through June 30, 2016, the Program has committed US\$1.7 billion to 191 partnership investments (the "Portfolio"). This quarterly monitoring report covers the performance of the Portfolio as of June 30, 2016 as well as significant activity that occurred during the second quarter of 2016.

#### **Performance Summary**

US\$ in millions	June 30, 2016	March 31, 2016	June 30, 2015	Quarterly Change	Yearly Change
Number of Managers	116	115	114	1	2
Number of Investments	191	186	180	5	11
Committed Capital <sup>1</sup>	\$1,739.2	\$1,652.1	\$1,540.8	\$87.1	\$198.4
Contributed Capital	\$1,367.3	\$1,331.6	\$1,214.2	\$35.7	\$153.1
Distributed Capital	\$1,066.1	\$1,017.3	\$928.0	\$48.7	\$138.0
Market Value	\$814.0	\$806.1	\$760.2	\$7.9	\$53.8
Total Value	\$1,880.1	\$1,823.5	\$1,688.2	\$56.6	\$191.9
Total Gain/(Loss)	\$512.7	\$491.9	\$474.0	\$20.8	\$38.8
Unfunded Commitment <sup>2</sup>	\$545.9	\$481.7	\$480.4	\$64.2	\$65.5
Total Exposure <sup>3</sup>	\$1,359.9	\$1,287.8	\$1,240.6	\$72.0	\$119.3
DPI <sup>4</sup>	0.78x	0.76x	0.76x	0.02x	0.02x
TVM <sup>5</sup>	1.37x	1.37x	1.39x	0.01x	-0.02x
IRR <sup>6</sup>	10.4%	10.4%	11.0%	+ 1 bps	-58 bps
TVM Net of StepStone Fees <sup>7</sup>	1.37x	1.37x	1.39x	0.00x	-0.02x
IRR Net of StepStone Fees <sup>7</sup>	10.4%	10.4%	11.0%	+ 1 bps	-59 bps

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

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

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

<sup>4</sup> DPI, or Distributed to Paid-In Multiple, is a performance metric that measures distributions received relative to capital invested. DPI is calculated as Distributed Capital divided by Contributed Capital. <sup>5</sup> TVM, or Total Value Multiple, is a performance metric that measures total value created by the Portfolio relative to capital invested, without consideration for time. TVM is calculated as Total Value,

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

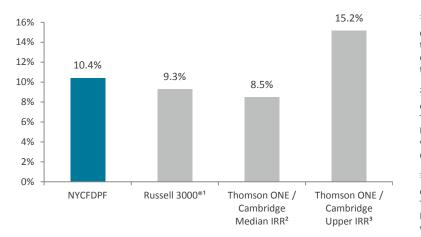
<sup>7</sup> TVM and IRR Net of StepStone fees represent TVM and IRR net of fees paid by NYCFDPF to StepStone.



#### **Portfolio Performance vs. Benchmarks**

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

The following graph illustrates Portfolio IRR performance versus benchmarks as of June 30, 2016.



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

<sup>2</sup> Benchmark is for informational purposes only and is NOT part of the Program's Policy Benchmarks. Benchmark is provided by Thomson ONE/Cambridge and reflects U.S. All Private Equity Funds Median Quartile IRR as of June 30, 2016 for funds with vintage years 1998 to 2016. Note: Thomson ONE/Cambridge data is continuously updated and is therefore subject to change.

<sup>3</sup>Benchmark is for informational purposes only and is NOT part of the Program's Policy Benchmarks. Benchmark is provided by Thomson ONE/Cambridge and reflects U.S. All Private Equity Funds Upper Quartile IRR as of June 30, 2016 for funds with vintage years 1998 to 2016. Note: Thomson ONE/Cambridge data is continuously updated and is therefore subject to change.

#### **Portfolio Diversification**

#### **By Strategy**

	Marke	Market Value		ommitment	Total Exposure		
As of June 30, 2016 (US\$ in millions)	\$	% of Total	\$	% of Total	\$	% of Total	
Buyout	\$485.0	59.6%	\$318.2	58.3%	\$803.2	59.1%	
Growth Equity	105.3	12.9%	54.1	9.9%	159.4	11.7%	
Special Situations	56.5	6.9%	42.3	7.8%	98.9	7.3%	
Energy	19.3	2.4%	2.2	0.4%	21.6	1.6%	
Secondaries	73.2	9.0%	93.1	17.0%	166.3	12.2%	
Co-Investment	14.6	1.8%	32.6	6.0%	47.3	3.5%	
Other	60.0	7.4%	3.3	0.6%	63.3	4.7%	
Total	\$814.0	100.0%	\$545.9	100.0%	\$1,359.9	100.0%	

#### **By Fund Geographic Focus**

	Marke	Market Value		ommitment	Total Exposure		
As of June 30, 2016 (US\$ in millions)	\$	% of Total	\$	% of Total	\$	% of Total	
North America	\$555.9	68.3%	\$273.4	50.1%	\$829.3	61.0%	
Global	203.5	25.0%	207.3	38.0%	410.8	30.2%	
Western Europe	49.8	6.1%	64.7	11.9%	114.5	8.4%	
Rest of World	4.9	0.6%	0.4	0.1%	5.3	0.4%	
Total	\$814.0	100.0%	\$545.9	100.0%	\$1,359.9	100.0%	

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



# **II. Market Overview**

#### **Executive Summary**

Global equities finished a volatile quarter with modest gains. The major story of the second quarter was the vote in the United Kingdom to leave the European Union, and the quarter ended with increased global market volatility due to the so-called "Brexit". This vote added to the uncertainty in the markets and led to speculation that the United Kingdom and the European Union could be headed for growth headwinds, if not a recession. Amid the uncertainty in global markets and a weaker than expected job report in May, the United States Federal Reserve decided against a further rate hike, pushing out the possibility of the year's first rate increase to the third quarter at the earliest. The S&P 500 Total Return Index finished the quarter 2.5% higher, despite the lack of growth in the global markets.<sup>1</sup> The MSCI Asia and MSCI EM were both flat for the quarter, while the MSCI Europe index was down 4.2%.<sup>1</sup> With all of the uncertainty in Europe, the U.S. dollar strengthened significantly against the British pound, and more modestly against the euro.<sup>2</sup>

In private markets, U.S. LBO debt volume was down 2.3% compared to the first quarter of 2016 at US\$21.0 billion, but was above the 10-year quarterly average of US\$18.3 billion and above the Q2 2015 level by 3.3%.<sup>3</sup> Purchase price multiples for U.S. LBOs fell from 10.5x EBITDA in the first quarter to 9.7x EBITDA in the second quarter.<sup>3</sup> This multiple is also below the 10.3x multiple of the second quarter of 2015.<sup>3</sup> Average debt multiples of large corporate U.S. LBO loans fell slightly quarter-over-quarter from 5.6x to 5.5x.<sup>3</sup> Equity contributions for U.S. LBOs were also down from the first quarter's level of 46.3% to 44.7%.<sup>3</sup>

The first quarter's healthy level of private equity fundraising continued in the second quarter, as the US\$93.0 billion raised is the most for any quarter since Q3 2008.<sup>4</sup> Buyout fundraising increased 38.9% quarter-over-quarter and 11.2% compared to the second quarter of 2015.<sup>4</sup> Venture Capital fundraising was down considerably for the quarter, decreasing 36.2% versus the first quarter of 2016 and down 24.3% compared to Q2 2015.<sup>4</sup> Geographically, U.S. fundraising represented 54.7% of total funds raised in the second quarter.<sup>4</sup> Similarly to the first quarter, the percentage of funds raised in Asia was significantly below the 12.8% 10-year average, at 0.4%.<sup>4</sup> Europe accounted for 25.2% of the global funds raised, above the 10-year average of 5.4%.<sup>4</sup> Fundraising for the rest of the world made up 19.7% of the global fundraising, well above the 10-year average of 5.4%.<sup>4</sup> Fundraising for the rest of the world was the highest it has ever been in a single quarter.<sup>4</sup> However, this was driven by one firm, Brookfield Asset Management Inc, which raised over US\$15.8 billion across two funds.<sup>4</sup> Removing the effects of this one firm would bring the rest of the world's portion of fundraising down to 3.4%.<sup>4</sup> Private equity investment activity was up 42.7% quarter-over-quarter, but was lower by 8.3% compared to the second quarter of 2015.<sup>4</sup>

NYSE and NASDAQ private equity-backed IPO transaction volume rebounded from the low levels of the first quarter with a 439.4% quarter-over-quarter increase and US\$3.1 billion raised in 19 IPOs in the second quarter of 2016.<sup>4</sup> Despite an increase over the previous quarter, volume was down 70.3% compared to the second quarter of 2015.<sup>4</sup> The largest IPO of the quarter was US Foods Holding Corp. (NYSE: USFD), which raised US\$1.2 billion.<sup>4</sup> Second quarter M&A volume was US\$131.1 billion for the quarter, a decrease of 45.5% and 39.3% compared to the first quarter of 2016 and the second quarter of 2015, respectively.<sup>4</sup> The largest M&A deal of the quarter was the US\$19.0 billion merger of Newell Brands Inc. and Jarden Corp.<sup>4</sup>

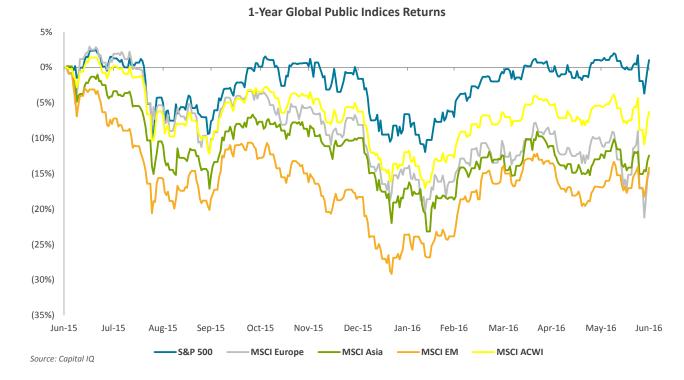
<sup>1</sup> Source: Capital IQ <sup>2</sup>Source: Bloomberg database <sup>3</sup>Source: S&P LBO Review <sup>4</sup>Source: Thomson ONE



#### **Capital Markets Overview**

#### **Public Equity Markets**

The second quarter of 2016 was marked by volatility in the public markets. The United Kingdom's vote in late June to leave the European Union caused significant declines in all global markets, however most rebounded from the lows, with the exception of European markets. The S&P 500 Total Return outperformed other global markets, increasing 2.5% for the quarter. The MSCI Asia index was flat for the quarter and the MSCI Emerging Markets index declined slightly, down 0.3%. The MSCI Europe index, impacted heavily by the UK vote, was down 4.2% for the quarter.



The following table shows the returns of four major MSCI indices, as well as the S&P 500 and the S&P 500 Total Return Index, over various time horizons through June 30, 2016. Returns for time periods greater than one year are annualized. The U.S. market has outperformed the Asian, European, and emerging markets over the past quarter, as well as the 1 year, 3 year, 5 year, and 10 year periods.

	R	egional Indice	s		
	3 Mo	1 Yr	3 Yr	5 Yr	10 Yr
MSCI Asia	0.0%	(12.4%)	0.3%	(0.2%)	0.1%
MSCI Europe	(4.2%)	(13.8%)	(0.8%)	(1.9%)	(1.5%)
MSCI EM	(0.3%)	(14.2%)	(3.9%)	(6.2%)	1.1%
MSCI ACWI	0.3%	(5.7%)	3.9%	3.2%	2.1%
S&P 500	1.9%	1.7%	9.3%	9.7%	5.2%
S&P 500 Total Return*	2.5%	4.0%	11.7%	12.1%	7.4%

For the period ended June 30, 2016

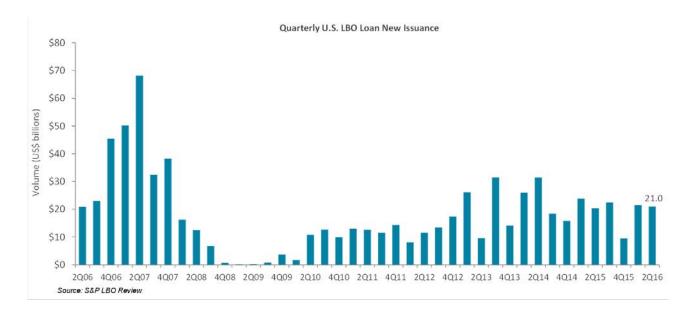
\*Includes reinvestment of dividends.

Source: Capital IQ

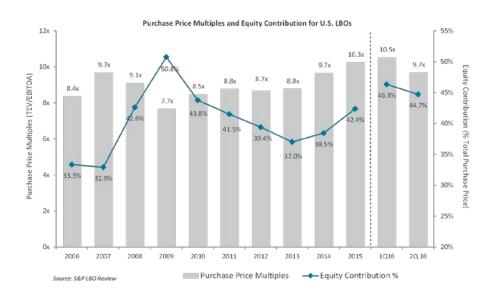


#### **Debt Markets**

During the second quarter of 2016, U.S. LBO new loan issuance totaled US\$21.0 billion, representing a decrease of 2.3% from the prior quarter, but 15.2% higher than the 10-year quarterly average of US\$18.3 billion. The US\$21.0 billion represents a 3.3% increase from the Q2 2015 level of US\$20.4 billion. The following chart shows the quarterly volume of U.S. LBO new loan issuance for the past ten years.



In the second quarter, weighted average purchase price multiples for U.S. LBO deals was 9.7x total enterprise value ("TEV") to EBITDA, an decrease from 10.5x in the prior quarter and below the 10.3x multiple from Q2 2015. Average debt multiples of large corporate U.S. LBO loans decreased from 5.6x in the first quarter of 2016 to 5.5x EBITDA in the second quarter, which is below the Q2 2015 value of 5.8x. Equity contributions for U.S. LBOs slightly decreased from 46.3% in the first quarter to 44.7% in the second quarter of this year. The equity contribution for this quarter represents a 6.9% increase compared to the second quarter of last year. The following chart compares purchase price multiples and equity contribution percentages for U.S. LBO deals.





#### **Private Equity Market Overview**

#### All Private Equity

The table below shows the pooled Internal Rate of Return ("IRR") performance of global private equity investments by sector over various investment horizons through June 30, 2016. The All Private Equity benchmark was up 1.4% for the quarter. All sectors except Mezzanine were up quarter-over-quarter, with Mezzanine declining modestly from 0.9% last quarter to 0.2% this quarter. The Energy sector was the best performer, with a positive quarter-to-date IRR for the first time since the second guarter of 2015. Following Energy's 5.2% IRR for the guarter were Large Buyouts (+1.5%) and Small/Middle Buyouts (+1.4%). Venture Capital was flat for the guarter.

Sector	3 Mo	1 Yr	3 Yr	5 Yr	10 Yr
Small/Middle Buyouts (<\$3bn)	1.4%	4.4%	11.0%	9.2%	10.5%
Large Buyouts (>\$3bn)	1.5%	5.4%	13.9%	11.2%	9.9%
Mezzanine	0.2%	3.9%	7.1%	7.9%	7.6%
Energy	5.2%	(13.1%)	(4.6%)	(0.5%)	4.4%
Venture Capital	0.0%	(0.7%)	17.3%	12.9%	10.5%
All Private Equity	1.4%	1.9%	10.9%	9.4%	9.3%

Source: Burgiss PrivateiQ

#### Fundraising

Fundraising for global private equity totaled US\$93.0 billion in the second guarter of 2016, a 15.1% increase compared to the first quarter of the year. Buyout fundraising rose 38.9% quarter-over-quarter, raising US\$61.1 billion, and increased 11.2% compared to Q2 2015. Venture Capital raised US\$11.2 billion, a decrease of 36.2% and 24.3% compared to the first quarter of 2016 and second quarter of 2015, respectively. Geographically, U.S. fundraising represented 54.7% of the total amount raised in the guarter, while Europe, Asia, and the rest of the world accounted for 25.2%, 0.4%, and 19.7%, respectively. The contributions from Asia and the rest of the world are significantly off from the 10-year averages. Asia's contribution is 96.8% below the 10-year average and the rest of the world is 264.0% above the 10-year average. The chart below shows private equity fundraising activity over the past ten years.

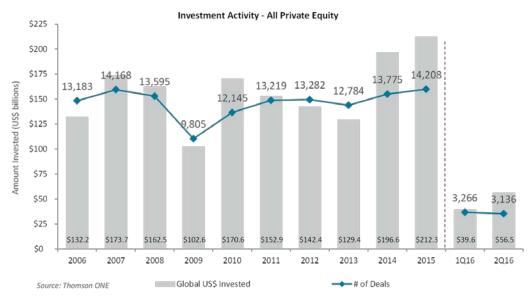


Fundraising by Year - All Private Equity

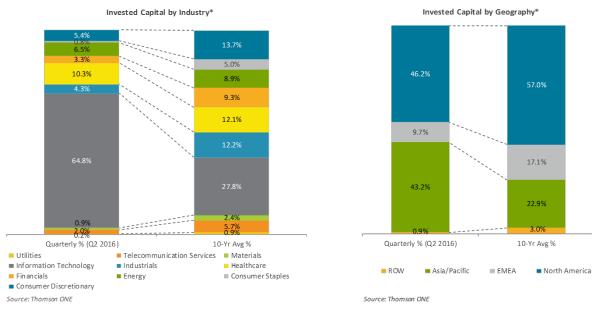


#### **Investment Activity**

Private equity funds invested US\$56.5 billion globally during the second quarter, representing a quarter-over-quarter increase of 42.7%. The seven largest transactions for the quarter accounted for 41.4% of all private equity investment activity. The average investment size during the quarter was US\$18.0 million, up 48.6% quarter-over-quarter and 8.2% over Q2 2015.



The graphs below depict the percentage of invested capital by industry and geography for the second quarter of 2016 and over the last ten years. The Information Technology (IT) sector attracted the most capital, accounting for US\$36.6 billion of transactions, or 64.8% of total capital invested by private equity firms, compared to a 10-year pro rata average of 27.8%. The increase in capital invested in IT quarter-over-quarter is a result of a significant increase in the average equity invested. The top five IT companies attracted US\$20.5 billion in Q2, whereas the top five in Q1 raised US\$6.9 billion. In the second quarter of 2016, investment activity in the Asia/Pacific region was above the historical average, representing 43.2% of total invested capital during the quarter compared to 22.9% over the last ten years.



\*Note: Invested Capital is for all private equity from Q2 2006 – Q2 2016.

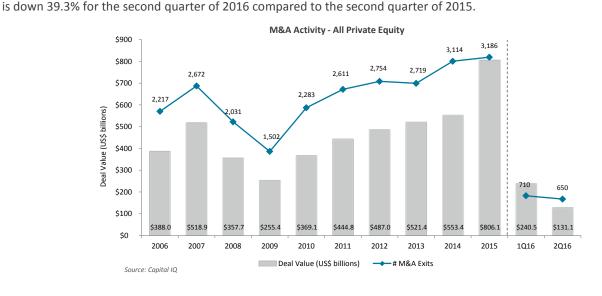


#### **Deal Environment**

Private equity-backed IPOs were up in the second quarter from the low levels of the first quarter of 2016. During the quarter there were 19 private equity-backed IPOs which raised US\$3.1 billion on the NYSE and NASDAQ, 13 IPOs from venture capital, which raised a total of US\$947.0 million, and six IPOs from buyouts with a total of US\$2.2 billion raised. This is higher than the US\$574.5 million raised in six IPOs in the first quarter, but below the 49 deals that raised US\$10.4 billion in Q2 2015. Through the first two quarters of 2016, US\$3.7 billion has been raised in IPOs, compared to US\$13.1 billion in the first half of 2015. The graph below shows the amount raised and the number of Buyout and Venture Capital IPOs on the NYSE and NASDAQ over the past ten years.



The number of private equity-backed Mergers and Acquisitions ("M&A") were down from 710 last quarter to 650 this quarter, and deal value decreased 45.5%, totaling US\$131.1 billion. The largest M&A deal of the quarter was the US\$19.0 billion Newell Brands merger with Jarden Corp., representing 14.5% of the total deal value for the quarter. M&A deal value





# III. Portfolio Review

#### **Quarterly Highlights**

- Cash Flow Activity During the second quarter of 2016, the Portfolio made US\$35.7 million of contributions and received US\$48.7 million of distributions, for a net cash inflow of US\$13.0 million, compared to a net cash outflow of US\$9.2 million during the prior quarter and a net cash inflow of US\$26.6 million during the second quarter of 2015. Contributions increased 5.0% from the prior quarter and increased 18.4% from the second quarter of 2015. The most recent four quarter average of the Program's contributions is US\$38.3 million. Distributions increased 96.2% from the prior quarter of 2015. The most recent four quarter and decreased 14.2% from the second quarter of 2015. The most recent four quarter average of the Program's distributions.
- **Recent Portfolio Activity** During the second quarter of 2016, net of cash flow activity, the valuation of the Portfolio increased by US\$20.8 million, or 2.6%, from the prior quarter. The increase in Portfolio value is primarily attributable to strong performance of growth equity funds during the quarter, which generated a US\$6.3 million increase in valuation from the prior quarter-end. During the last twelve months, net of cash flow activity, the valuation of the Portfolio increased by US\$38.8 million, or 5.0%, from the quarter ended June 30, 2015.
- **New Investment Commitments** During the second quarter of 2016, the Program closed on five new investment commitments, totaling US\$88.8 million.

As of June 30, 2016 (US\$ in millions)	Month Closed	Sub-Strategy	Geographic Focus	Committ	ed Capital
Green Equity Investors VII, L.P.	April 2016	Mega Buyout	North America	\$	17.0
Vista Equity Partners Fund VI, L.P.	May 2016	Mega Buyout	North America		28.0
Apax IX USD, L.P.	May 2016	Mega Buyout	Global		22.0
BC European Capital X	June 2016	Mega Buyout	Western Europe		15.6
BCEC X Co-Investment	June 2016	Co/Direct Investment	Western Europe		6.2
Total				\$	88.8

• **Subsequent Investment Commitments** – Subsequent to quarter-end through November 7, 2016, the Program closed on one new investment commitment, totaling US\$3.5 million.

As of November 7, 2016 (US\$ in millions)	Month Closed	Sub-Strategy	Geographic Focus	Commi	tted Capital
FTV V, L.P.	September 2016	Growth Equity	North America	\$	3.5
Total				\$	3.5



#### **Investment Performance**

#### **Since Inception Performance**

				Quarterly	Yearly
US\$ in millions	June 30, 2016	March 31, 2016	June 30, 2015	Change	Change
Active Investments					
Number of Managers	106	105	104	1	2
Number of Investments	176	171	165	5	11
Committed Capital <sup>1</sup>	\$1,657.3	\$1,570.2	\$1,458.8	\$87.1	\$198.4
Contributed Capital	\$1,275.1	\$1,239.3	\$1,122.0	\$35.7	\$153.1
Distributed Capital	\$951.9	\$903.2	\$813.9	\$48.7	\$138.0
Market Value	\$814.0	\$806.1	\$760.2	\$7.9	\$53.8
Total Value	\$1,766.0	\$1,709.4	\$1,574.1	\$56.6	\$191.9
Total Gain/(Loss)	\$490.9	\$470.1	\$452.1	\$20.8	\$38.8
Unfunded Commitment <sup>2</sup>	\$545.9	\$481.7	\$480.4	\$64.2	\$65.5
Total Exposure <sup>3</sup>	\$1,359.9	\$1,287.8	\$1,240.6	\$72.0	\$119.3
DPI <sup>4</sup>	0.75x	0.73x	0.73x	0.02x	0.02x
TVM <sup>5</sup>	1.38x	1.38x	1.40x	0.01x	-0.02x
IRR <sup>6</sup>	10.8%	10.8%	11.5%	+ 1 bps	-68 bps
Exited Investments					
Number of Managers	13	13	13	-	-
Number of Investments	15	15	15	-	-
Committed Capital <sup>1</sup>	\$82.0	\$82.0	\$82.0	\$0.0	\$0.0
Contributed Capital	\$92.3	\$92.3	\$92.3	\$0.0	\$0.0
Distributed Capital	\$114.1	\$114.1	\$114.1	\$0.0	\$0.0
Total Value	\$114.1	\$114.1	\$114.1	\$0.0	\$0.0
Total Gain/(Loss)	\$21.8	\$21.8	\$21.8	\$0.0	\$0.0
Unfunded Commitment <sup>2</sup>	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
DPI <sup>4</sup>	1.24x	1.24x	1.24x	0.00x	0.00x
TVM <sup>5</sup>	1.24x	1.24x	1.24x	0.00x	0.00x
IRR <sup>6</sup>	7.1%	7.1%	7.1%	+ 0 bps	+ 0 bps
Total Portfolio					
Number of Managers	116	115	114	1	2
Number of Investments	191	186	180	5	11
Committed Capital <sup>1</sup>	\$1,739.2	\$1,652.1	\$1,540.8	\$87.1	\$198.4
Contributed Capital	\$1,367.3	\$1,331.6	\$1,214.2	\$35.7	\$153.1
Distributed Capital	\$1,066.1	\$1,017.3	\$928.0	\$48.7	\$138.0
Market Value	\$814.0	\$806.1	\$760.2	\$7.9	\$53.8
Total Value	\$1,880.1	\$1,823.5	\$1,688.2	\$56.6	\$191.9
Total Gain/(Loss)	\$512.7	\$491.9	\$474.0	\$20.8	\$38.8
Unfunded Commitment <sup>2</sup>	\$545.9	\$481.7	\$480.4	\$64.2	\$65.5
Total Exposure <sup>3</sup>	\$1,359.9	\$1,287.8	\$1,240.6	\$72.0	\$119.3
DPI <sup>4</sup>	0.78x	0.76x	0.76x	0.02x	0.02x
TVM <sup>5</sup>	1.37x	1.37x	1.39x	0.01x	-0.02x
IRR <sup>6</sup>	10.4%	10.4%	11.0%	+ 1 bps	-58 bps

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

<sup>3</sup> Total Exposure represents the aggregate remaining commitments to partnership investments.

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

<sup>5</sup> TVM, or Total Value Multiple, is a performance metric that measures total value created by the Portfolio relative to capital invested, without consideration for time. TVM is calculated as Total Value, which is comprised of Market Value plus Distributed Capital, divided by Contributed Capital. <sup>6</sup> IRR, or Internal Rate of Return, is a performance metric that is calculated based on the Portfolio's daily cash flows and market value as of quarter-end. IRR is net of fund manager's fees, expenses and carried

interest. 10 of 25



#### Performance by Vintage Year

The following table and chart illustrate the Portfolio's since inception investment performance by vintage year as of June 30, 2016 relative to the median quartile U.S. All Private Equity TVM and IRR benchmarks as provided by Thomson ONE/Cambridge. Performance of funds that are less than two years old are not meaningful. Note that Thomson ONE/Cambridge data is continuously updated and is therefore subject to change.

#### As of June 30, 2016 (US\$ in millions)

Vintage Year	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Unfunded Commitment	Total Exposure	TVM	IRR	PME Benchmark <sup>1</sup>	PME Spread <sup>2</sup>	Thomson ONE / Cambridge U.S. All PE Median Quartile TVM	Thomson ONE / Cambridge U.S. All PE Median Quartile IRR
1998	\$10.0	\$10.0	\$13.8	\$0.0	\$0.0	\$0.0	1.37x	6.3%	3.4%	2.9%	1.35x	6.0%
1999	54.5	63.0	81.8	6.8	0.6	7.5	1.41x	8.5%	6.3%	2.2%	1.09x	1.2%
2000	28.8	33.8	42.1	3.1	-	3.1	1.34x	7.1%	6.2%	0.9%	1.22x	3.6%
2001	49.1	58.5	99.0	1.0	2.0	3.0	1.71x	21.2%	8.2%	13.0%	1.58x	8.4%
2002	5.0	4.8	7.0	0.4	0.3	0.6	1.54x	23.5%	7.3%	16.1%	1.57x	10.1%
2003	28.9	31.7	63.4	4.9	2.6	7.4	2.15x	25.2%	7.1%	18.2%	1.59x	9.7%
2004	54.3	58.9	56.3	9.5	2.6	12.1	1.12x	2.6%	6.6%	-4.0%	1.47x	7.2%
2005	69.0	76.1	78.8	29.5	3.6	33.1	1.42x	7.2%	7.2%	0.0%	1.46x	7.3%
2006	135.3	150.7	150.9	55.1	6.6	61.7	1.37x	6.9%	8.4%	-1.5%	1.51x	7.7%
2007	123.4	131.3	108.8	59.8	10.0	69.8	1.28x	6.9%	10.8%	-3.9%	1.60x	11.0%
2008	194.8	215.1	186.2	117.8	18.5	136.3	1.41x	11.3%	13.5%	-2.2%	1.50x	11.3%
2009	46.9	44.8	38.8	33.1	4.1	37.2	1.61x	15.5%	14.3%	1.2%	1.65x	15.8%
2010	42.5	42.0	31.4	33.1	9.9	43.0	1.54x	19.7%	12.4%	7.3%	1.48x	13.6%
2011	168.4	154.9	59.8	164.5	30.0	194.5	1.45x	15.9%	12.3%	3.6%	1.36x	13.5%
2012	158.8	123.9	29.3	129.5	43.1	172.6	1.28x	15.7%	9.3%	6.4%	1.24x	12.9%
2013	169.7	67.8	6.3	66.9	103.3	170.3	1.08x	6.9%	5.6%	1.3%	1.13x	8.8%
2014	149.6	78.7	12.2	78.0	79.7	157.7	1.15x	13.9%	4.8%	9.1%	1.06x	6.3%
2015	144.6	18.1	0.0	17.6	126.5	144.2	NM	NM	NM	N/A	NM	NM
2016	105.8	3.4	-	3.4	102.4	105.8	NM	NM	NM	N/A	NM	NM
Total	\$1,739.2	\$1,367.3	\$1,066.1	\$814.0	\$545.9	\$1,359.9	1.37x	10.4%	9.3%	1.1%	1.35x	8.5%

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

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



#### As of June 30, 2016



#### Portfolio Periodic Returns vs. Russell 3000® Index

As of June 30, 2016	3 Month	1 Year	3 Year	5 Year	10 Year	Since Inception
NYCFDPF IRR	2.6%	5.0%	10.9%	9.6%	10.1%	10.4%
Russell 3000 <sup>®1</sup>	2.6%	2.4%	11.2%	11.9%	9.7%	9.3%
Russell 3000 <sup>®</sup> + 300 bps <sup>2</sup>	5.6%	5.4%	14.2%	14.9%	12.7%	12.3%
NYCFDPF Outperformance/(Underperformance	)					
vs. Russell 3000 <sup>®</sup> + 300 bps <sup>2</sup>	(3.0%)	(0.4%)	(3.3%)	(5.3%)	(2.7%)	(1.9%)

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

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

#### Performance by Strategy / Sub-Strategy

The following table and charts illustrate the Portfolio's since inception investment performance by strategy and substrategy as of June 30, 2016.

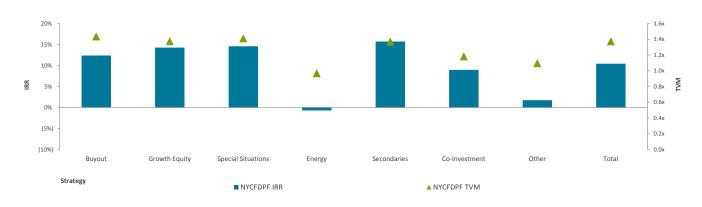
As of June 30, 2016 (US\$ in millions)

Strategy / Sub-Strategy	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Unfunded Commitment	Total Exposure	TVM	IRR
Buyout	\$1,072.3	\$884.2	\$786.0	\$485.0	\$318.2	\$803.2	1.44x	12.4%
Mega Buyout	279.1	157.7	139.9	86.2	144.9	231.1	1.43x	12.2%
Large Buyout	343.0	291.8	242.6	204.9	97.0	301.9	1.53x	24.9%
Middle-Market Buyout	232.0	209.5	198.6	91.9	54.7	146.6	1.39x	8.1%
Small Buyout	218.2	225.2	204.9	102.1	21.5	123.6	1.36x	9.3%
Growth Equity	156.7	114.9	52.8	105.3	54.1	159.4	1.38x	14.3%
Special Situations	108.0	77.7	53.3	56.5	42.3	98.9	1.41x	14.6%
Energy	37.5	39.9	19.3	19.3	2.2	21.6	0.97x	-0.7%
Secondaries	186.6	95.5	57.8	73.2	93.1	166.3	1.37x	15.7%
Co-Investment	49.0	16.6	5.0	14.6	32.6	47.3	1.18x	9.0%
Other	129.1	138.5	91.8	60.0	3.3	63.3	1.10x	1.8%
Venture Capital	112.6	118.2	67.2	56.9	2.1	59.0	1.05x	0.9%
Mezzanine	16.5	20.3	24.6	3.1	1.2	4.3	1.37x	11.6%
Total	\$1,739.2	\$1,367.3	\$1,066.1	\$814.0	\$545.9	\$1,359.9	1.37x	10.4%



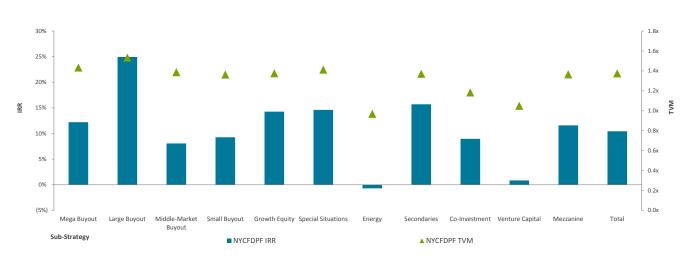
#### Performance by Strategy

As of June 30, 2016



#### Performance by Sub-Strategy

As of June 30, 2016





#### **Portfolio Diversification**

The following tables illustrate the Portfolio's diversification by strategy and fund geographic focus as of June 30, 2016.

#### By Strategy/Sub-Strategy

	Market	Value	Unfunded C	ommitment	Total E	cposure
As of June 30, 2016 (US\$ in millions)	\$	% of Total	\$	% of Total	\$	% of Total
Buyout	\$485.0	59.6%	\$318.2	58.3%	\$803.2	59.1%
Mega Buyout	86.2	10.6%	144.9	26.6%	231.1	17.0%
Large Buyout	204.9	25.2%	97.0	17.8%	301.9	22.2%
Middle-Market Buyout	91.9	11.3%	54.7	10.0%	146.6	10.8%
Small Buyout	102.1	12.5%	21.5	3.9%	123.6	9.1%
Growth Equity	105.3	12.9%	54.1	9.9%	159.4	11.7%
Special Situations	56.5	6.9%	42.3	7.8%	98.9	7.3%
Energy	19.3	2.4%	2.2	0.4%	21.6	1.6%
Secondaries	73.2	9.0%	93.1	17.0%	166.3	12.2%
Co-Investment	14.6	1.8%	32.6	6.0%	47.3	3.5%
Other	60.0	7.4%	3.3	0.6%	63.3	4.7%
Venture Capital	56.9	7.0%	2.1	0.4%	59.0	4.3%
Mezzanine	3.1	0.4%	1.2	0.2%	4.3	0.3%
Total	\$814.0	100.0%	\$545.9	100.0%	\$1,359.9	100.0%

#### **By Fund Geographic Focus**

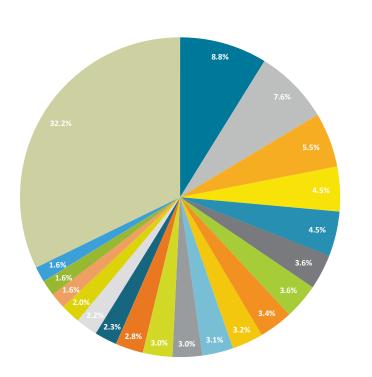
	Market Value		Unfunded Co	mmitment	Total Ex	Total Exposure	
As of June 30, 2016 (US\$ in millions)	\$	% of Total	\$	% of Total	\$	% of Total	
North America	\$555.9	68.3%	\$273.4	50.1%	\$829.3	61.0%	
Global	203.5	25.0%	207.3	38.0%	410.8	30.2%	
Western Europe	49.8	6.1%	64.7	11.9%	114.5	8.4%	
Rest of World	4.9	0.6%	0.4	0.1%	5.3	0.4%	
Total	\$814.0	100.0%	\$545.9	100.0%	\$1,359.9	100.0%	

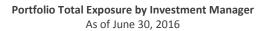
Prior to a fund being 75% drawn, fund geographic focus is based on the GP-stated geographic strategy. Subsequent to a fund being 75% drawn, fund geographic focus is based on actual portfolio company exposure by total invested capital. Funds with less than 75% of total invested capital allocated to one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



#### **By Investment Manager**

As of June 30, 2016, the Portfolio was highly diversified by investment manager, with 19 managers comprising US\$921.6 million, or 67.8% of total exposure. The remaining 87 managers comprised 32.2% of total exposure as of quarter-end.





Ardian (fka AXA Private Equity) (7.6%) Warburg Pincus (5.5%) Apollo Management (4.5%) Ares Management (4.5%) ■ EQT Partners (3.6%) Lexington Partners (3.6%) Leonard Green & Partners (3.4%) CVC Capital Partners (3.2%) BC Partners (3.1%) Landmark Partners (3.0%) American Securities (3.0%) Crestview Partners (2.8%) ■ Summit Partners (2.3%) The Carlyle Group (2.2%) Platinum Equity (2.0%) Apax Partners (1.6%) ■ The Blackstone Group (1.6%) Bridgepoint Capital (1.6%)

Vista Equity Partners (8.8%)

Remaining 87 managers (32.2%)

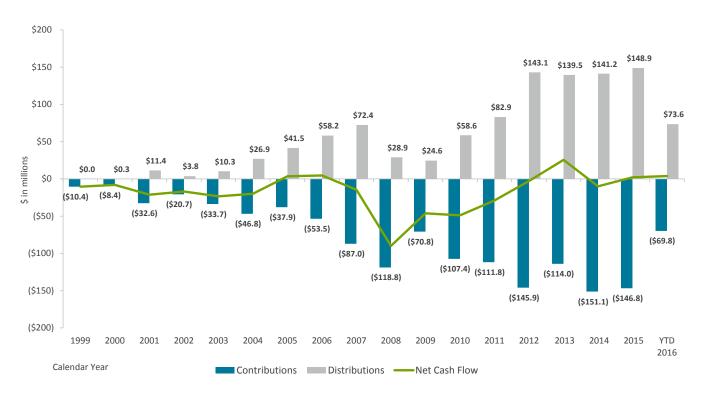


#### **Portfolio Cash Flow Analysis**

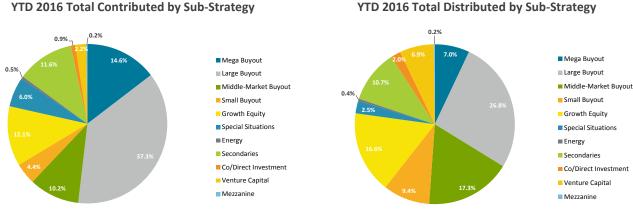
The following yearly and quarterly cash flow analysis is based on actual Portfolio cash flows during those time periods.

#### Year to Date Cash Flow Activity

During the six months ended June 30, 2016, the Portfolio made US\$69.8 million of contributions and received US\$73.6 million of distributions, for a net cash inflow of US\$3.8 million, compared to a net cash inflow of US\$20.9 million during the same period in the prior year. The graph below illustrates cash flow activity since inception by calendar year.



Buyout funds were the most active in terms of cash flow activity during the first six months of 2016. Buyout funds drew down US\$26.5 million, or 74.3% of total contributions during first six months of 2016, and distributed US\$28.9 million, or 59.3% of total distributions during the first six months of 2016.

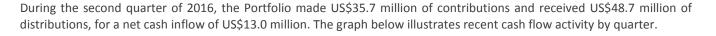


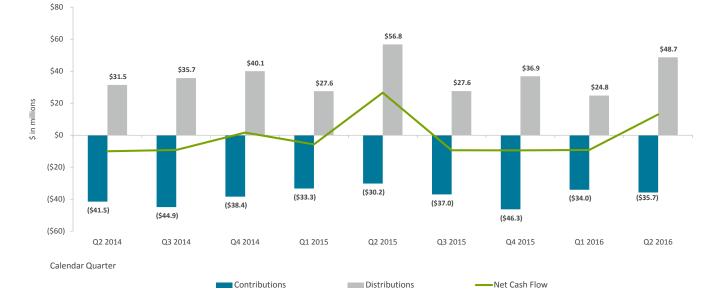
YTD 2016 Total Distributed by Sub-Strategy

<sup>16</sup> of 25

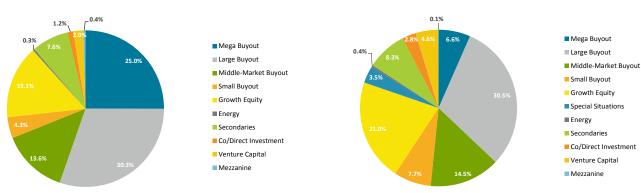


#### **Quarterly Cash Flow Activity**





Buyout funds were the most active in terms of cash flow activity during the second quarter of 2016. Buyout funds drew down US\$26.5 million, or 74.3% of total contributions during the quarter, and distributed US\$28.9 million, or 59.3% of total distributions during the quarter.



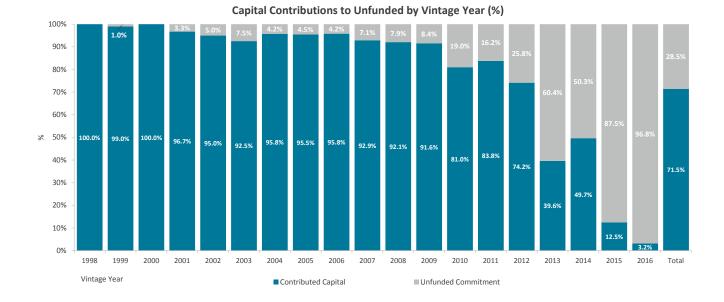
#### Q2 2016 Total Contributed by Sub-Strategy

Q2 2016 Total Distributed by Sub-Strategy

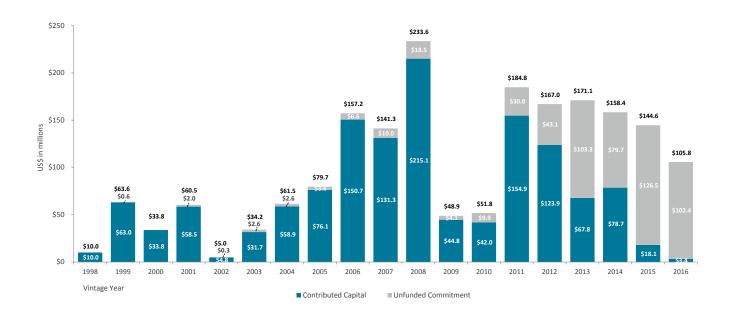


#### **Invested Capital by Vintage Year**

The following chart illustrates cumulative net capital contributions as a percentage of total capital commitments, by fund vintage year, as of June 30, 2016.



The following chart illustrates cumulative net capital contributions relative to unfunded commitment, by fund vintage year, as of June 30, 2016.



#### **Capital Contributions to Unfunded by Vintage Year**

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#### **Portfolio Company-Level Analysis**

#### **Geographic Exposure**

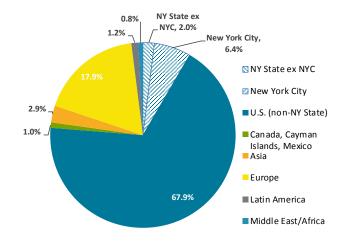
The following charts illustrate the Portfolio's current exposure by geography at the portfolio company level as of June 30, 2016. Please note that the geography is based upon the corporate headquarters of each portfolio company.

#### NY State ex 1.8% As of June 30, 2016 (US\$ in millions) NYC, 1.8% 1.1% New York City, Sum of Current Cost % of Total 7.1% North America \$509.4 🛯 NY State ex NYC 76.8% New York 59.2 8.9% 🛛 New York City NY State ex NYC 12.2 1.8% 2.6% U.S. (non-NY State) New York City 47.0 7.1% U.S. (non-NY State) 440.9 66.5% Canada, Cayman 1.4% Islands, Mexico Asia Canada, Cayman Islands, Mexico 9.3 1.4% Asia 17.2 2.6% Furope Europe 117.2 17.7% Latin America 7.4 1.1% Latin America 66.5% Middle East/Africa 11.9 1.8% Middle East/Africa Total \$663.1 100.0%

#### **Geographic Exposure by Current Cost**



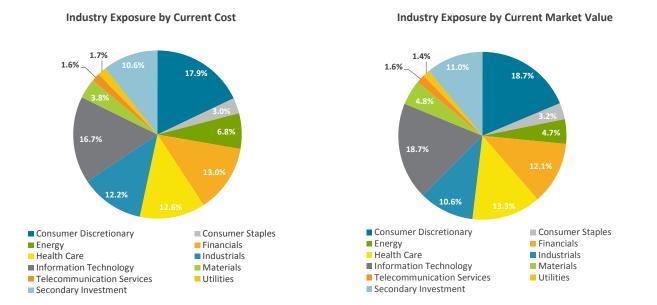
As of June 30, 2016 (US\$ in millions)		
	Sum of Current Market Value	% of Total
North America	\$678.4	77.2%
New York	73.7	8.4%
NY State ex NYC	17.6	2.0%
New York City	56.1	6.4%
U.S. (non-NY State)	596.3	67.9%
Canada, Cayman Islands, Mexico	8.4	1.0%
Asia	25.6	2.9%
Europe	157.0	17.9%
Latin America	10.4	1.2%
Middle East/Africa	7.2	0.8%
Total	\$878.6	100.0%





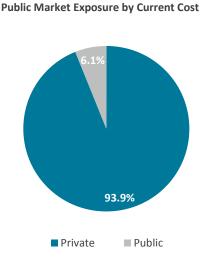
#### **Industry Exposure**

The following charts illustrate the Portfolio's current exposure by industry at the portfolio company level as of June 30, 2016. Please note that the Financials category includes investments in various debt securities.

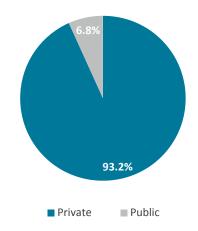


#### **Public Market Exposure**

As of quarter-end, publicly traded investments comprised 6.1% of the Portfolio's exposed cost and 6.8% of the Portfolio's exposed market value. The following charts illustrate the current public market exposure at the portfolio company level.



#### Public Market Exposure Current Market Value





# IV. Appendix



#### New York City Fire Department Pension Fund, Subchapter 2 Private Equity Portfolio As of June 30, 2016 (in USD)

Vintage Year	Investment	First Drawdown	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Multiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME
	restments		Capital	Capital	Capital				Benchmark	Spread <sup>3</sup>
1999	Cypress Merchant Banking Partners II, L.P.	3/29/1999	22,586,486	\$ 26,980,800	\$ 25,211,548	\$ 84,977	0.94x	(1.2%)	5.5%	(6.7%
1999	FdG Capital Partners LLC	6/2/1999	25,000,000	28,756,836	42,947,884	6,365,392	1.71x	14.8%	6.5%	8.3%
1999	Lincolnshire Equity Fund II, L.P.	10/20/1999	6,899,005	7,223,050	13,673,658	389,236	1.95x	24.6%	6.9%	17.7%
2000	SCP Private Equity Partners II, L.P.	6/15/2000	15,000,000	16,834,296		3,141,840	0.55x	(7.2%)	5.6%	(12.8%
2001	New Mountain Partners, L.P.	3/16/2001	9,070,967	8,558,234	12,215,748	235,653	1.45x	12.4%	6.2%	6.1%
2001 2001	Apollo Investment Fund V, L.P.	4/13/2001	15,000,000	23,371,979	45,986,226	484,851	1.99x 2.59x	38.8%	8.4% 10.8%	30.4% 30.2%
2001	CVC European Equity Partners III, L.P. Landmark Equity Partners XI, L.P.	9/4/2001 10/23/2002	10,000,000 5,000,000	11,579,021 4,753,167	29,775,858 6,969,592	267,002 372,676	2.59x 1.54x	41.1% 23.5%	7.3%	16.1%
2002	FS Equity Partners V, L.P.	1/20/2003	10,000,000	8,557,271	16,700,851	926,781	2.06x	15.7%	4.9%	10.1%
2003	Blackstone Capital Partners IV, L.P.	2/26/2003	13,875,989	17,133,309	37,913,538	3,456,230	2.41x	36.4%	8.3%	28.1%
2003	Ares Corporate Opportunities Fund, L.P.	4/1/2003	5,000,000	5,998,308	8,773,548	501,761	1.55x	13.6%	7.4%	6.2%
2004	Markstone Capital Partners, LP	1/30/2004	5,000,000	5,862,384	2,477,825	244,491	0.46x	(35.3%)	18.0%	(53.3%
2004	Euro Choice II (Delaware) L.P.	2/25/2004	6,751,155	6,714,168	9,293,644	474,770	1.45x	7.1%	6.0%	1.1%
2004	FdG Capital Partners II LP	8/30/2004	5,000,000	5,374,885	6,071,286	341,389	1.19x	3.5%	6.6%	(3.0%
2004	Paladin Homeland Security Fund (NY City), L.P.	9/27/2004	7,500,000	8,174,017	2,624,712	1,145,678	0.46x	(10.7%)	6.1%	(16.7%
2004 2004	Lincolnshire Equity Fund III, L.P.	10/1/2004 10/1/2004	5,000,000	4,915,466	6,315,197	2,475,117	1.79x	30.0% 2.9%	10.3% 10.4%	19.7%
2004	Yucaipa American Alliance Fund I, LP New York/Fairview Emerging Managers Fund, L.PTranche 1	10/21/2004	5,000,000 2,000,000	7,491,869 2,045,345	6,475,457 1,664,736	1,782,194 849,034	1.10x 1.23x	3.8%	8.4%	(7.4%
2004	Aurora Equity Partners III L.P.	11/16/2004	5,000,000	5,412,312		564,762	1.70x	14.4%	9.8%	4.6%
2004	Trilantic Capital Partners III L.P.	11/18/2004	5,000,000	4,519,812	7,302,147	107,534	1.64x	14.6%	3.9%	10.7%
2004	Celtic Pharmaceutical Holdings L.P.	12/23/2004	2,500,000	2,540,209	40,209	397,602	0.17x	(18.7%)	9.5%	(28.3%
2004	Medica III Investments (International) L.P.	8/21/2006	3,000,000	2,937,724	1,267,948	1,158,000	0.83x	(4.3%)	2.5%	(6.8%
2005	Palladium Equity Partners III, L.P.	11/12/2004	10,000,000	10,468,643	14,756,597	5,401,286	1.93x	16.8%	11.0%	5.7%
2005	New Mountain Partners II, L.P.	1/12/2005	2,580,650	2,321,161	4,492,653	40,438	1.95x	13.7%	4.4%	9.3%
2005	VSS Communications Partners IV, L.P.	3/14/2005	2,469,034	2,843,010	1,892,176	222,634	0.74x	(5.2%)	7.4%	(12.6%
2005	Carlyle Partners IV, L.P.	4/29/2005	5,000,000	5,153,158	9,792,207	426,384	1.98x	13.1%	4.1%	9.0%
2005	Prism Venture Partners V-A, L.P.	7/14/2005	7,500,000	7,690,681	4,178,447	1,222,621	0.70x	(6.9%)	8.0%	(14.9%
2005 2005	Snow Phipps Group, L.P. GI Partners Fund II L.P.	9/7/2005 9/26/2005	5,000,000 2,500,000	5,768,591 2,531,598	4,517,833 2,989,101	2,974,158 891,610	1.30x 1.53x	6.9% 7.1%	10.3% 5.5%	(3.4%
2005	Blackstone Mezzanine Partners II, L.P.	10/10/2005	3,000,000	2,864,827	3,781,012	69,332	1.34x	7.9%	3.7%	4.2%
2005	Psilos Group Partners III, L.P.	10/24/2005	2,500,000	2,657,559	1,282,054	1,929,055	1.21x	3.7%	7.1%	(3.4%
2005	FirstMark Capital I, L.P. (fka FirstMark IV)	11/21/2005	1,500,000	1,639,064	3,432,909	6,293,441	5.95x	40.0%	9.2%	30.8%
2005	USPF II Institutional Fund, L.P.	11/23/2005	5,000,000	6,594,940	4,572,978	4,540,200	1.38x	6.2%	7.0%	(0.8%
2005	Bridgepoint Europe III	12/6/2005	5,396,041	4,993,430	3,193,843	2,344,780	1.11x	1.6%	5.4%	(3.9%
2005	JP Morgan Fleming (Tranche A)	12/21/2005	3,000,000	2,920,137	2,096,048	1,754,598	1.32x	6.0%	10.2%	(4.2%
2005	Arlington Capital Partners II, L.P.	4/20/2006	4,000,000	4,067,113	6,216,490	749,210	1.71x	11.2%	6.5%	4.7%
2005	Levine Leichtman Capital Partners Deep Value Fund, L.P.	1/16/2007	5,000,000	6,229,039	5,743,593	662,401	1.03x	0.7%	4.8%	(4.1%
2006 2006	Aisling Capital II, LP InterMedia Partners VII, L.P.	1/12/2006 1/20/2006	1,000,000 2,500,000	1,177,469 2,897,020	789,316 1,787,415	265,423 2,409,513	0.90x 1.45x	(2.3%) 5.5%	7.1% 9.8%	(9.4%
2000	Terra Firma Capital Partners III, L.P.	3/8/2006	5,222,581	5,301,883	535,226	2,405,513	0.49x	(11.0%)	8.2%	(19.3%
2006	Fenway Partners Capital Fund III, L.P.	3/29/2006	5,000,000	5,658,696	4,418,192	1,940,498	1.12x	2.4%	7.0%	(4.6%
2006	Blackstone Capital Partners V, L.P.	4/13/2006	9,448,250	10,034,511	12,914,896	3,349,186	1.62x	8.2%	8.1%	0.0%
2006	Avista Capital Partners, L.P.	4/27/2006	5,000,000	6,533,026		2,456,236	1.26x	5.1%	5.9%	(0.8%
2006	Apollo Investment Fund VI, L.P.	5/10/2006	20,000,000	25,741,832		6,018,682	1.49x	8.9%	7.3%	1.6%
2006	Ares Corporate Opportunities Fund II, L.P.	5/23/2006	5,000,000	5,476,087	8,281,158	975,324	1.69x	13.5%	3.9%	9.6%
2006	CCMP Capital Investors II, L.P.	8/17/2006	5,000,000	5,497,480	6,657,119	2,551,596	1.68x	13.6%	10.1%	3.5%
2006	CLP 2014 (fka Perseus Partners VII)	8/31/2006	5,000,000	5,835,907	2,017,659	120,743	0.37x	(23.9%)	13.1%	(36.9%
2006	Euro Choice III L.P.	11/21/2006	5,321,464	5,250,336		2,000,309	1.14x	2.9%	11.8%	(8.9%
2006	Thomas, McNerney & Partners II, L.P. Catterton Partners VI, L.P.	11/29/2006	3,000,000	2,975,394		1,664,914	2.26x	17.5%	11.2%	6.3%
2006 2006	First Reserve Fund XI, L.P.	12/14/2006 12/14/2006	5,000,000	5,543,047	6,788,609 3,065,224	3,643,075	1.88x	13.1%	8.3%	4.8%
2006	Permira IV, L.P.	12/14/2006	5,000,000 5,516,070	5,313,265 5,830,665	6,887,557	520,797 1,853,789	0.67x 1.50x	(9.8%) 8.3%	5.5% 9.1%	(15.3%) (0.8%)
2006	Arsenal Capital Partners II, LP	12/18/2006	4,000,000	4,892,596		3,458,841	1.66x	11.0%	11.2%	(0.2%
2006	GF Capital Private Equity Fund, L.P.	12/18/2006	3,000,000	3,060,562		2,053,466	1.78x	14.0%	11.4%	2.6%
2006	RRE Ventures IV, L.P.	12/19/2006	2,500,000	3,110,269	1,503,208	3,185,884	1.51x	7.8%	10.2%	(2.5%
2006	Coller International Partners V, L.P.	12/21/2006	5,000,000	4,321,379	4,861,247	1,231,231	1.41x	8.5%	10.4%	(1.9%
2006	MidOcean Partners III, L.P.	12/21/2006	10,000,000	11,391,019	8,587,186	9,164,112	1.56x	9.6%	9.0%	0.5%
2006	The Fourth Cinven Fund	1/22/2007	2,812,116	2,870,272	3,706,523	212,546		6.5%	7.2%	(0.7%
2006	Falconhead Capital Partners II, L.P.	3/23/2007	4,000,000	4,455,013		1,369,368		2.9%	8.0%	(5.1%
2006	Atlantic Equity Partners IV, L.P.	10/30/2007	3,768,757	3,290,223		1,980,625	0.60x	(7.6%)	9.5%	(17.0%
2006	Capital Partners Private Equity Income Fund, L.P.	11/29/2007	2,000,000	1,913,892		606,546	2.19x	20.9%	11.0%	9.9%
2007	Pegasus Partners IV, L.P.	1/29/2007	7,500,000	8,862,519		4,352,487	1.00x	(0.1%)	10.7%	(10.8%
2007 2007	Olympus Capital Asia III, L.P. FTVentures III, LP	1/31/2007 3/1/2007	5,000,000 2,500,000	5,770,405 2,545,000		4,230,087 2,405,299	1.11x 2.14x	3.0% 16.4%	10.9% 9.8%	(7.9% 6.6%
2007	Highland Consumer Fund I LP	3/16/2007	2,000,000	1,943,212		2,403,299	0.80x	(3.7%)	9.8%	(13.6%
2007	Montreux Equity Partners IV, L.P.	3/27/2007	5,000,000	5,000,000		4,931,464	1.33x	5.9%	9.7%	(13.0%
2007	Gleacher Mezzanine Fund II, L.P.	3/30/2007	3,000,000	2,750,179		124,432	1.29x	9.7%	12.0%	(2.3%
2007	SCP Vitalife Partners II Fund	4/13/2007	5,000,000	5,024,924		3,133,967	0.62x	(8.8%)	9.0%	(17.8%
2007	Constellation Venture Capital III, L.P.	5/22/2007	5,000,000	5,432,003		3,207,740		(4.4%)	16.1%	(20.5%
			5,000,000	5,515,908		4,698,673	1.32x	5.7%	7.9%	(2.3%



#### New York City Fire Department Pension Fund, Subchapter 2 Private Equity Portfolio As of June 30, 2016 (in USD)

Vintage Year	Investment	First Drawdown	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Multiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME Spread <sup>3</sup>
2007	Carlyle Partners V, L.P.	7/6/2007	10,000,000	10,184,151	12,076,219	4,750,712	1.65x	13.3%	10.5%	2.8%
2007	PCG Clean Energy & Technology Fund (East), LLC	7/6/2007	10,000,000	8,845,014	1,108,953	4,232,058	0.60x	(9.2%)	12.8%	(22.0%)
2007	GSO Capital Opportunities Fund LP	7/16/2007	7,500,000	11,200,918	15,242,680	1,001,818	1.45x	17.9%	10.2%	7.7%
2007	New Mountain Partners III, L.P.	8/9/2007	10,000,000	9,862,701	7,913,491	8,471,099	1.66x	12.0%	12.1%	(0.1%)
2007	Vista Equity Partners Fund III, L.P.	10/3/2007	7,500,000	7,967,886	16,962,701	3,487,420	2.57x	28.3%	9.8%	18.5%
2007 2007	Trilantic Capital Partners IV L.P. Pine Brook Capital Partners, L.P.	10/22/2007 1/11/2008	7,236,332	7,507,405 7,855,515	10,233,177	1,389,319 4,370,967	1.55x 1.14x	13.7% 4.5%	10.6% 10.6%	3.2%
2007	Princeton Capital Corporation (fka Capital Point Partners, L.P.)	10/17/2008	3,000,000	3,497,432	4,616,071 2,182,562	1,912,935	1.14x 1.17x	4.5%	10.8%	(10.8%)
2007	Post Capital Equity Partners II LP	2/10/2009	3,000,000	2,019,923	934,449	2,108,513	1.51x	9.9%	14.8%	(10.8%)
2008	Paladin III (NY City), L.P.	1/8/2008	7,500,000	9,371,539	4,461,743	7,771,899	1.31x	7.7%	11.0%	(3.3%)
2008	Relativity Fund, L.P.	1/8/2008	1,631,513	1,612,064	345,053	519,690	0.54x	(10.9%)	9.7%	(20.6%)
2008	Apollo Investment Fund VII, L.P.	1/28/2008	25,000,000	29,506,925	44,154,667	7,417,890	1.75x	24.3%	13.3%	11.0%
2008	NGN BioMed Opportunity II, L.P.	2/11/2008	5,000,000	4,787,955	986,553	2,415,702	0.71x	(7.6%)	15.7%	(23.3%)
2008	Riverstone/Carlyle Global Energy & Power Fund IV, L.P.	3/3/2008	7,500,000	8,276,519	5,634,569	3,747,935	1.13x	4.3%	13.6%	(9.3%)
2008	Yucaipa American Alliance Fund II, LP	3/28/2008	15,000,000	20,468,035	12,161,707	15,684,209	1.36x	8.4%	11.7%	(3.3%)
2008	Levine Leichtman Capital Partners IV, L.P.	4/8/2008	5,000,000	5,020,220	6,336,736	2,525,112	1.77x	20.6%	14.1%	6.5%
2008	Lee Equity Partners Fund, L.P.	4/23/2008	6,575,577	8,827,057	10,053,774	707,798	1.22x	6.3%	13.3%	(7.0%)
2008	New York/Fairview Emerging Managers Fund, L.PTranche 2	5/28/2008	5,000,000	4,672,735	2,807,690	4,332,182	1.53x	14.1%	12.4%	1.6%
2008	Yucaipa Corporate Initiatives Fund II, LP	6/23/2008	4,676,976	4,548,656	1,407,741	2,774,039	0.92x	(1.8%)	10.6%	(12.5%)
2008	CVC European Equity Partners V, L.P.	7/21/2008	13,702,262	14,418,612	14,021,617	7,212,600	1.47x	12.2%	12.2%	0.0%
2008	GI Partners Fund III L.P.	7/29/2008	7,500,000	8,033,222	8,164,684	3,379,013	1.44x	12.1%	15.2%	(3.1%)
2008	Ares Corporate Opportunities Fund III, L.P.	7/30/2008	10,000,000	11,794,882	12,151,867	9,101,148	1.80x	20.8%	11.6%	9.3%
2008	GCM Grosvenor NYCFDPF Emerging Manager Co-Investment Fund, L.P.		990,607	1,266,482	2,024,794	(19,032		11.7%	11.5%	0.1%
2008	GCM Grosvenor NYCFDPF Emerging Manager Fund, L.P.	8/22/2008	8,979,798	9,841,351	5,721,940	6,720,877	1.26x	9.3%	12.9%	(3.6%)
2008	First Reserve Fund XII, L.P.	8/25/2008	5,000,000	5,326,308	2,349,052	1,589,012	0.74x	(8.2%)	16.6%	(24.8%)
2008	Landmark Equity Partners XIV, L.P.	9/19/2008	13,630,000	12,735,190	10,513,151	6,211,204	1.31x	11.8%	14.7%	(2.9%)
2008	Crestview Partners II, L.P.	10/1/2008	7,500,000	8,175,451	6,640,235	5,209,591	1.45x	12.0%	14.5%	(2.5%)
2008 2008	NB New York City Growth Fund IA Milestone Partners III. L.P.	10/17/2008 10/17/2008	1,208,990	1,208,990	417,624	387,445 1,476,065	0.67x 0.92x	(6.7%) (1.8%)	16.9% 14.5%	(23.6%)
2008	Euro Choice IV L.P.	10/17/2008	3,000,000	3,144,871 5,643,065	1,412,957 1,791,520	4,916,036	0.92x 1.19x	(1.8%) 5.1%	14.5%	(16.4%)
2008	Avista Capital Partners II, L.P.	11/5/2008	6,463,081 10,000,000	12,166,867	13,606,274	8,358,478	1.19x 1.81x	17.4%	14.3%	(7.6%) 3.1%
2008	Bridgepoint Europe IV	11/14/2008	6,685,694	6,150,241	5,323,707	3,619,092	1.45x	10.4%	14.3%	(4.5%)
2008	Carpenter Community BancFund-A, L.P.	11/17/2008	3,000,000	2,922,576	1,735,627	2,817,540	1.45X	8.1%	14.9%	(4.5%)
2008	Blue Wolf Capital Fund II, L.P.	11/19/2008	3,000,000	3,252,569	1,497,149	2,395,738	1.20x	5.7%	16.4%	(10.7%)
2008	Aisling Capital III, LP	11/20/2008	3,500,000	3,713,831	3,362,159	2,305,757	1.53x	18.9%	14.7%	4.2%
2008	Onex Partners III LP	12/10/2008	5,000,000	5,401,799	3,927,686	4,180,855	1.50x	12.7%	14.7%	(2.0%)
2009	NorthBound Emerging Manager Custom Fund LP	1/29/2009	5,000,000	4,194,637	3,182,874	3,739,945	1.65x	15.9%	14.1%	1.8%
2009	Welsh, Carson, Anderson & Stowe XI, L.P.	2/10/2009	7,500,000	7,263,743	6,034,790	4,861,257	1.50x	12.8%	14.3%	(1.6%)
2009	Scale Venture Partners III, LP	5/1/2009	5,000,000	4,893,728	5,655,528	4,804,304	2.14x	21.9%	13.2%	8.7%
2009	FS Equity Partners VI, L.P.	7/27/2009	12,500,000	12,033,214	9,369,101	12,433,893	1.81x	17.9%	14.9%	3.0%
2009	Lincolnshire Equity Fund IV, L.P.	8/5/2009	2,500,000	2,562,083	876,260	2,247,628	1.22x	7.3%	12.9%	(5.6%)
2009	Lexington Capital Partners VII, L.P.	12/3/2009	10,000,000	8,533,768	7,686,468	4,966,689	1.48x	15.3%	14.0%	1.2%
2010	Snow Phipps II, L.P.	1/8/2010	7,500,000	7,460,440	3,580,096	7,575,626	1.50x	17.5%	12.3%	5.2%
2010	Trident V, L.P.	4/29/2010	15,000,000	15,840,661	4,460,575	15,534,781	1.26x	8.0%	11.0%	(2.9%)
2010	Comvest Investment Partners IV, L.P.	10/21/2010	20,000,000	18,690,251	23,342,906	9,982,652	1.78x	35.3%	13.8%	21.5%
2011	Blackstone Capital Partners VI, L.P.	1/24/2011	10,000,000	9,297,057	1,633,657	9,622,211	1.21x	9.8%	10.9%	(1.1%)
2011	Ampersand 2011	3/11/2011	5,000,000	4,825,000	1,738,828	7,484,405	1.91x	19.2%	12.2%	7.0%
2011	BDCM Opportunity Fund III, L.P.	4/8/2011	10,000,000	12,756,957	4,606,283	10,482,293	1.18x	8.4%	11.0%	(2.6%)
2011	AXA Secondary Fund V B L.P.	6/16/2011	40,000,000	31,630,972	21,672,320	26,005,967	1.51x	17.0%	14.1%	2.9%
2011 2011	Wellspring Capital Partners V, L.P. EQT VI, L.P.	7/1/2011 8/1/2011	7,500,000 17,667,829	6,726,896 15,087,796	912,473 432,427	8,227,318 18,448,837	1.36x 1.25x	14.6% 8.6%	10.7% 10.4%	3.9% (1.8%)
2011	Pegasus Partners V, L.P.	8/16/2011	6,236,975	4,936,046	432,427	6,835,137	1.25x 1.61x	8.6%	10.4%	(1.8%) 3.3%
2011	BC European Capital IX	9/19/2011	21,990,952	18,581,135	6,438,926	16,094,963	1.01x 1.21x	8.3%	12.6%	(4.3%)
2011	American Securities Partners VI, L.P.	11/18/2011	20,000,000	21,213,405	6,547,052	23,238,849	1.21x 1.40x	18.8%	12.6%	(4.5%) 8.1%
2011	Vista Equity Partners Fund IV, L.P.	11/30/2011	30,000,000	29,800,767	14,751,840	38,069,567	1.77x	22.7%	12.1%	10.6%
2011	Warburg Pincus Private Equity XI, L.P.	5/24/2012	35,000,000	32,687,928	5,889,135	34,782,652	1.24x	12.4%	10.0%	2.4%
2012	Summit Partners Growth Equity Fund VIII-A, L.P.	6/14/2012	30,000,000	27,837,207	8,497,318	28,354,380	1.32x	18.1%	8.6%	9.5%
2012	NYCFDPF - 2012 Emerging Manager Program <sup>4</sup>	6/21/2013	25,000,000	14,038,704	1,001,941	14,788,850	1.12x	9.0%	6.2%	2.4%
2012	Trilantic Capital Partners V L.P.	9/20/2012	10,000,000	5,639,777	365,430	5,264,946	1.00x	(0.1%)	8.3%	(8.5%)
2012	Palladium Equity Partners IV, L.P.	10/10/2012	10,000,000	4,538,403	491,887	4,425,715	1.08x	4.0%	11.5%	(7.5%)
2012	Ares Corporate Opportunities Fund IV, L.P.	11/5/2012	20,000,000	15,675,352	1,393,247	16,952,781	1.17x	9.2%	7.1%	2.1%
2012	Green Equity Investors VI, L.P.	11/30/2012	25,000,000	20,159,385	3,264,310	21,147,692	1.21x	11.7%	8.5%	3.3%
2012	Platinum Equity Capital Partners III, L.P.	1/14/2013	25,000,000	15,044,258	9,036,039	15,886,013	1.66x	46.6%	11.2%	35.4%
2013	Carlyle Partners VI, L.P.	7/3/2013	20,000,000	10,096,629	332,892	10,966,914	1.12x	8.0%	5.8%	2.2%
2014	Carlyle Partners VI, L.P. (Side Car)	9/23/2014	1,218,333	1,193,499	-	1,113,732	0.93x	NM	NM	N/A
2013	Landmark Equity Partners XV, L.P.	10/30/2013	26,000,000	9,004,591	3,563,984	6,920,297	1.16x	11.1%	7.7%	3.4%
2013	Landmark - NYC Fund I, L.P.	12/24/2013	9,000,000	3,974,337	1,068,364	3,925,181	1.26x	16.1%	3.9%	12.2%
2013	Apollo Investment Fund VIII, L.P.	12/11/2013	40,000,000	17,321,576	388,431	18,464,993	1.09x	9.2%	4.7%	4.5%



#### New York City Fire Department Pension Fund, Subchapter 2 Private Equity Portfolio As of June 30, 2016 (in USD)

Vintage Year	Investment	First Drawdown	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Multiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME Spread <sup>3</sup>
2013	CVC Capital Partners VI, L.P.	2/18/2014	34,666,890	12,972,844	236,858	12,691,439	1.00x	(0.4%)	5.8%	(6.2%)
2013	Crestview Partners III, L.P.	3/3/2015	24,000,000	5,495,327	90,739	4,748,153	0.88x	NM	NM	N/A
2013	Crestview Partners III (Co-Investment B), L.P.	12/17/2015	8,000,000	2,681,773	112,373	2,658,956	1.03x	NM	NM	N/A
2014	Olympus Growth Fund VI, L.P.	1/24/2014	15,000,000	7,615,899	1,156,836	7,861,705	1.18x	28.0%	9.1%	19.0%
2014	ASF VI B L.P.	5/9/2014	30,000,000	14,525,419	780,362	16,684,138	1.20x	15.2%	4.9%	10.3%
2014	ASF VI B NYC Co-Invest L.P.	5/9/2014	10,000,000	6,307,868	1,413,032	6,581,046	1.27x	18.3%	2.7%	15.7%
2014	Vista Equity Partners Fund V, L.P.	9/8/2014	40,000,000	35,099,325	6,933,042	31,405,378	1.09x	NM	NM	N/A
2014	Lexington Capital Partners VIII, L.P.	1/8/2015	40,000,000	8,851,772	1,743,825	9,410,350	1.26x	NM	NM	N/A
2014	Centerbridge Capital Partners III, L.P.	5/21/2015	4,200,000	1,118,366	44,277	1,178,204	1.09x	NM	NM	N/A
2015	Siris Partners III, L.P.	5/4/2015	5,500,000	850,404	4,241	744,715	0.88x	NM	NM	N/A
2015	Welsh, Carson, Anderson & Stowe XII, L.P.	8/26/2015	14,000,000	3,675,604	-	3,838,818	1.04x	NM	NM	N/A
2015	Warburg Pincus Private Equity XII, L.P.	12/21/2015	36,000,000	2,498,942	-	2,145,597	0.86x	NM	NM	N/A
2015	ASF VII B L.P.	12/29/2015	17,000,000	1,190,177	4,483	1,393,692	1.17x	NM	NM	N/A
2015	ASF VII B NYC Co-Invest L.P.	12/29/2015	9,000,000	900	-	900	1.00x	NM	NM	N/A
2015	EQT VII, L.P.	1/8/2016	27,867,465	5,250,192	-	4,646,003	0.88x	NM	NM	N/A
2015	American Securities Partners VII, L.P.	1/19/2016	14,000,000	-	-	(86,512)	-	NM	NM	N/A
2015	Bridgepoint Europe V L.P.	2/8/2016	11,112,735	2,312,217	-	2,375,187	1.03x	NM	NM	N/A
2015	Bridgepoint Europe V Co-Invest	8/16/2016	3,331,680	-	-	-	-	N/A	N/A	N/A
2015	NYCFDPF - 2015 Emerging Manager Program <sup>5</sup>	2/22/2016	30,000,000	804,267	-	774,929	0.96x	NM	NM	N/A
2016	Vista Equity Partners Fund VI, L.P.	6/28/2016	28,000,000	3,359,402	-	3,392,022	1.01x	NM	NM	N/A
2016	Ares Corporate Opportunities Fund V, L.P.	N/A	17,000,000	-	-	-	-	N/A	N/A	N/A
2016	Apax IX USD, L.P.	N/A	22,000,000	-	-	-	-	N/A	N/A	N/A
2016	BC European Capital X	N/A	15,547,840	-	-	-	-	N/A	N/A	N/A
2016	BCEC X Co-Investment	N/A	6,219,136	-	-	-	-	N/A	N/A	N/A
2016	Green Equity Investors VII, L.P.	N/A	17,000,000	-	-	-	-	N/A	N/A	N/A
Total Port	folio <sup>6</sup>	\$	1,766,534,602	\$ 1,367,337,145	\$ 1,066,059,714	\$ 814,007,319	1.37x	10.4%	9.3%	1.1%

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

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

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

<sup>4</sup> NYCFDPF - 2012 Emerging Manager Program total commitment amount includes the full amount allocated to the Program, of which \$23.7 million has been committed as of November 7, 2016.

<sup>5</sup>NYCFDFF - 2015 Emerging Manager Program total commitment amount includes the full amount allocated to the Program, of which \$7.5 million has been committed as of November 7, 2016.

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

Note: IRRs presented are interim estimates and may not be indicative of the ultimate performance of fund investments due to a number of factors, such as the lack of industry valuation standards and the differences in the investment pace and strategy of various funds. Until a fund is liquidated, typically over 10 to 12 years, the IRR is only an interim estimated return. The IRR calculated in early years of a fund is not meaningful given the *j*-curve effect. The actual IRR performance of any fund is not known until all capital contributed and earnings have been distributed to the investor. The IRRs calculated in this report are calculated by StepStone Group LP ("StepStone"), a consultant to the New York CIty Fire Department Pension Fund, Subchapter 2, based on information provided by the general partners (e.g. cash flows and valuations). The IRR calculations and other information contained in this report have not been reviewed or confirmed by the general partners. The result of the IRR calculation may differ from that generated by the generated by tepStone flow confirmed by the generated interest, fund management (ess, advisory (ess, organizational fees, other fund expenses, sale of distributed stock, and valuations).



#### New York City Fire Department Pension Fund, Subchapter 2

Subsequent Commitments As of June 30, 2016 (in USD)

Vintage Year	Investment	First Drawdown	Committed Capital	Contribut Capital	ed	Distributed Capital		Market Value	Mul	tiple	IRR <sup>1</sup>	PME Benchmark <sup>2</sup>	PME Spread <sup>3</sup>
Commitm	ents Closed Subsequent to as of Date												
2016	FTV V, L.P.	N/A	\$ 3,500,000		-		-		-	N/A	N/A	N/A	N/A
Total Com	mitments Closed Subsequent to as of Date		\$ 3,500,000	\$	- \$		- \$		-	N/A	N/A	N/A	N/A

Note: IRRs presented are interim estimates and may not be indicative of the ultimate performance of fund investments due to a number of factors, such as the lack of industry valuation standards and the differences in the investment pace and strategy of various funds. Until a fund is liquidated, typically over 10 to 12 years, the IRR is only an interim estimated return. The IRR calculated in early years of a fund is not meaningful given the J-curve effect. The actual IRR performance of any fund is not known until all capital contributed and earnings have been distributed to the investor. The IRRs contained in this report are calculated by StepStone Group DF ("StepStone"), a consultant to the New York City Fire Department Pension Fund, Subchapter 2, based on information provided by the general partners (e.g. cash flows and valuations). The IRRs calculations and other information contained in this report have not been reviewed or confirmed by the general partners. The result of the IRR calculation may differ from that generated by the general partners or other limited partners. Differences in IRR calculations can be affected by cash-flow timing, the accounting treatment of carried interest, fund management fees, advisory fees, organizational fees, other fund expenses, sale of distributed stock, and valuations. Real Assets Quarterly Report

Executive Summary: Second Quarter 2016 Performance Measurement Report Real Estate

#### **Portfolio Profile**

The New York City Fire Department Pension Fund has allocated 8.0% of the total plan to Real Assets. The Real bill Estate Portfolio's objective is to generate a total net return that exceeds the NFI-ODCE +100 bps total net return resumeasured over full market cycles.

	Global investment activity for 2Q16 was generally modest, coming in at \$154
al	billion, bringing the first half down 10% y/y compared to 2015. U.S. cities continue
'n	to be attractive targets for global capital with New York and Los Angeles (1 $^{\rm st}$ and 3 $^{\rm rd}$
'n	respectively), accounting for 12% of global transactions. For eign investment
	represented approximately 12% of total U.S. activity, with China overtaking Canada
	as the primary foreign capital source year-to-date. On average, industrial and
	multifamily transaction cap rates were essentially flat for the first half of 2016 while
2	hotel and office saw 15 and 11 basis point expansions respectively.

#### Portfolio Statistics (June 30, 2016)

Total Plan Assets			\$11.0 bill	ion	1
Target Real Estate Allocation	on (%)			8%	
Target Real Estate Allocation	on (\$)		\$876.3 mill	ion	
Total Real Estate Market Va		\$493.7 mill	llion		
Real Estate Unfunded Com	mitment	S	\$150.2 mill	ion	
Total Real Estate Exposure			\$643.9 mill	ion	A
Number of Investments				54	A
Number of Managers				39	т S
Net Returns (as of June 30	<u>, 2016)</u>				
2Q16 Time-Weighted Net F	Return:		2.	5%	
1 Year Time Weighted Net	Return:		11.	5%	
3 Year Time Weighted Net	Return:		14.	2%	٦
Inception-to-Date (ITD) Tim	ne-Weigh	nted:	7.	0%	i I
ITD Net IRR:			7.	6%	}
ITD Net Equity Multiple:			1	.3x	(
Investment Guidelines					1
Style Sector:	Target		e/Core Plus		'
		•4.0% Nor	n-Core		
Benchmark	NFI		x +100 bps I market cyc		Γ
Pagion Diversification		Maxi	mum 2E0/ Ir	×*' I	

Region Diversification	Iviaximum 25% int T
Investment Diversification	Limit 15% to a single investment
Manager Diversification	Limit 15% to a single manager
Leverage	65%

#### Second Quarter Investment Activity

During the Quarter, the Board made a \$19.0 million commitment to a core-plus open-end fund, a \$23.1 million commitment to an opportunistic global distressed commercial real estate credit fund, and a \$19.0 million commitment to a U.S. focused non-core commercial real estate credit specialist.

#### Direct Commercial Real Estate Investment - Regional Volumes, 2015-2016

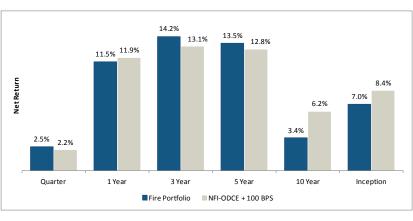
on	\$ US Billions	Q1 16	Q2 16	% Change Q1 16 - Q2 16	Q2 15	% Change Q2 15 - Q2 16	H1 2015	H1 2016	% Change H1 2015 - H1 2016
on	Americas	61	69	13%	80	-14%	153	130	-15%
	EMEA	51	57	12%	58	-2%	115	109	-5%
54	Asia Pacific	25	28	12%	31	-10%	56	54	-4%
5-4	Total	137	154	12%	169	-9%	324	293	-10%

Source: Jones Lang LaSalle, July 2016

**OVERVIEW** 

The New York City Fire Department Pension Fund ("Fire") Real Estate Portfolio is, and has been, well positioned to take advantage of conditions in the real estate marketplace. Post economic downturn, in the period reflected in the rolling fiveyear net return, Fire performance outperforms the benchmark by 68 basis points.

At the end of the Second Quarter 2016, the Portfolio achieved a total gross return of 3.1% which was comprised of 1.1% income and 1.9% appreciation. The net return for the Quarter was 2.5%. A detailed analysis of the Portfolio's real estate performance is found later in this Executive Summary.



Executive Summary: Second Quarter 2016 Performance Measurement Report Real Estate

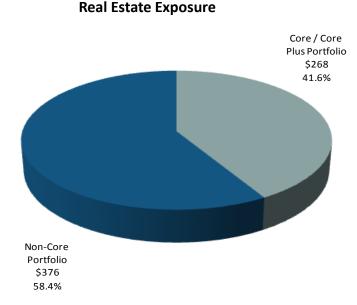
#### FUNDING AND COMPOSITION

At the end of the Second Quarter, the Portfolio was funded at \$493.7 million, or 4.5% of total plan assets. A total of \$150.2 million in unfunded commitments are still outstanding. New commitment activity has accelerated over the past several months and the trend will continue throughout 2016.

New contributions for the Quarter totaled \$9.5 million, offset by \$14.9 million in distributions and withdrawals. Distributions were weighted to the non-core sector.

Shown in the pie chart to the right is the current risk sector exposure calculated by Market Value + Unfunded Commitments. The Core/ Core Plus component accounts for 41.6% of the Portfolio exposure during the Quarter. The Non-Core component accounts for 58.4% of the Portfolio exposure.

A more detailed break-down of the Portfolio Composition is shown in the table below. Attached as Exhibit A is a matrix which demonstrates compliance with various Investment Policy Statement guidelines.



New York City Fire Department Pensio	on Fund							
Total Plan Assets 6/30/2016	10,953							
Real Estate Allocation (%)	8.0							
Real Estate Allocation (\$)	876.2							
Core/Core Plus Allocation (%)	4.0							
Core/Core Plus Allocation (\$)	438							
Non-Core Allocation (%)	4.0							
Non-Core Allocation (\$)	438							
Style Sector Allocation								
Funded (Market Value) Core / Core Plus Portfolio	241							
Funded (Market Value) Non-Core Portfolio	253							
Unfunded Core / Core Plus Portfolio	27							
Unfunded Non-Core Portfolio	124							
Funded (Market Value) and Committed	Statistics							
Core / Core Plus Portfolio	41.6%							
Non-Core Portfolio	58.4%							
Core/Core Plus Committed	268							
Non-Core Committed	376							
\$ Committed	644							
% Committed on Real Estate Allocation	73.5%							
% Committed on Total Plan Assets	5.9%							
Funded (Market Value) Statistic	s							
% Core/Core Plus Funded (Market Value) of Total Plan Assets	2.2%							
% Non-Core Funded (Market Value) of Total Plan Assets	2.3%							
% Funded (Market Value) of Total Plan Assets	4.5%							

Executive Summary: Second Quarter 2016 Performance Measurement Report
Real Estate

#### PERFORMANCE

During the Quarter under review, the Fire Real Estate Portfolio produced a 3.1% total gross return. The total net return for the Quarter was 2.5%. On a rolling one-year basis, the total gross return of 14.1% was recorded. On a net basis, the total return was 11.5%. On a gross basis, the Fire Portfolio exceeds the NFI-ODCE over all relevant time periods except the ten-year. The benchmark return contemplates a 100 bps premium over the ODCE net return over full market cycles. This benchmark is exceeded over the Quarter, three and five-year time periods. The various components of the Portfolio returns are depicted in the chart below.

#### Core/Core Plus

As of June 30, 2016 the market value of the Core/ Core Plus Portfolio was \$241.0 million, or 48.8% on an invested basis. On a funded and committed basis, the Core/ Core Plus Portfolio totaled \$267.6 million, or 41.6% of the total Portfolio. The Core/ Core plus Portfolio generated a 2.1% total gross return for the Quarter comprised of 1.2% in income and 0.9% in appreciation. The total net return for the Quarter was 1.9%.

The most significant contribution to the Quarterly return in the Core/Core Plus sector was PRISA II which added 0.1% to the overall performance of the Core/Core Plus sector. The largest detractor from the Core/Core Plus Portfolio was UBS Trumbull Property Fund, which took away (0.08)% from the total net return.

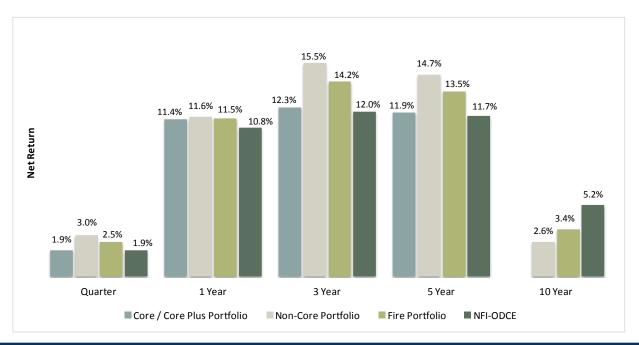
The Core/Core Plus Portfolio achieved a 12.3% net return over the three-year period ending June 30, 2016. Of the 17 Core/Core Plus Funds, PRISA II was the largest contributor, adding 0.3% to the overall performance of the Portfolio. UBS Trumbull Property Fund was the largest detractor, taking away (0.5)% from the overall performance of the Core/Core Plus Portfolio, however, with its low leverage target, UBS historically outperforms during down cycles.

#### Non-Core

As of June 30, 2016 the market value of the Non-Core Portfolio was \$252.7 million, or 51.2% on an invested basis. On a funded and committed basis, the Non-Core Portfolio totaled \$376.3 million, or 58.4% of the total Portfolio. The Non-Core Portfolio generated a 3.9% total gross return for the Quarter comprised of 1.1% in income and 2.8% in appreciation. The total net return for the Quarter was 3.0%.

Of the 36 Funds contributing to the Quarterly return of the Non-Core Portfolio, Divco West Fund IV was the largest contributor, adding 0.9%. Blackstone Real Estate Partners IV was the largest detractor for the Quarter, taking away (0.4)% from the overall performance of the Non-Core Portfolio.

The Non-Core Portfolio generated a three-year net return of 15.5%. Of the 36 Non-Core Funds that contributed to the three-year performance of the Portfolio, Divco West Fund IV was the largest contributor, adding 1.4%. The largest detractor among these Funds was The City Investment Fund I, which took away (1.2)% from overall Non-Core performance.



#### Second Quarter 2016

Executive Summary: Second Quarter 2016 Performance Measurement Report Real Estate

#### PERFORMANCE

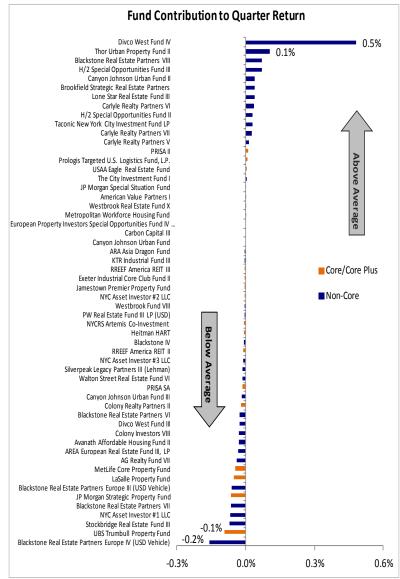
#### Portfolio Performance

At the end of the Second Quarter 2016, the Portfolio had a cumulative market value of \$493.7 million. Total market value plus unfunded commitments was \$643.9 million, or 73.5% of the real estate allocation. During the Quarter, the Portfolio achieved a total gross return of 3.1% which was comprised of 1.1% income and 1.9% appreciation. The Portfolio achieved a total net return of 2.5%. Since inception, the Portfolio has a net IRR of 7.6% and an equity multiple of 1.3x as of June 30, 2016. Note, attached as Exhibit B are performance metrics relating to each investment within the Portfolio.

The Quarterly return was driven by Divco West Fund IV, which contributed 0.5% to the overall performance. The primary laggards in the Portfolio were Blackstone Real Estate Partners IV and UBS Trumbull Property Fund, detracting (0.2)% and (0.1)%, respectively. Brief reviews of Funds making positive contributions to performance during the Quarter are found below. Note, that attached as Exhibit C are charts relating to fund contributions to returns during different relevant periods.

**DivcoWest Fund IV.** During the Quarter, the Fund recorded a total gross return of 11.6% comprised of 1.4% in income and 10.2% in appreciation. The net return after fees was 9.3%. As of June 30, 2016, the Fund had 17 unrealized investments with an acquisition cost of \$1.9 billion. During the Quarter, the Fund executed the sale of a business park located in California for a price of \$66.5 million or \$279 psf. Two other sale transactions totaling \$960.5 million were executed subsequent to Quarter-end. The Fund acquired a portfolio of two office buildings in San Ramon, California for \$47.6 million, or \$153 psf.

**Lone Star Real Estate Fund III.** The Fund produced a total gross return of 4.2%, comprised of 2.1% in income and 2.0% in appreciation. The net return after fees was 3.3%. There are currently 20 investments encompassing 1,314 assets. No dispositions were executed during the Quarter. Resolution of one of the Fund's European loan portfolios was completed with 84% of underwritten collections received. Refinancing of  $\notin$ 279 million was finalized with five lenders for the Fund's Spanish residential development investment. The Fund also increased its 27.8% stake in a Eastern European commercial real estate company to 60.6% as of Quarter-end. Total net equity returned as of the end of the Quarter was 34.3%.

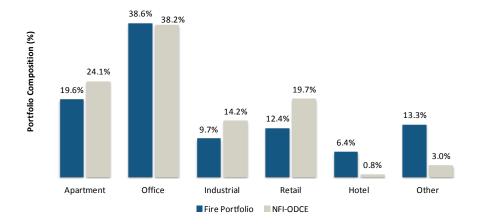


**Blackstone Real Estate Partners Europe VIII.** BREP VIII had a total Quarterly return of 7.7% comprised of 0.1% in income and 7.6% in appreciation. The net return after fees was 5.5%. During the Quarter, the portfolio increased in valuation by \$473 million with \$32.7 million distributed to LPs. Investments made during the Second Quarter totaled \$796 million and across major property types within the U.S. Europe and Asia. The largest investment was in a retail portfolio of 49 grocery store anchored shopping centers located across the U.S.

Executive Summary: Second Quarter 2016 Performance Measurement Report Real Estate

## **PROPERTY TYPE DIVERSIFICATION**

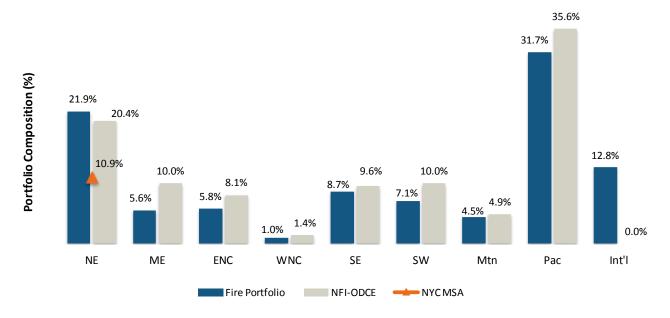
The diversification of the current Portfolio by property type is shown below and compared to the diversification of the NCREIF-ODCE at the end of the Quarter. Relative to the ODCE, the Portfolio is underweight to multifamily, industrial and retail. The Portfolio is overweight to hotel and other property types which includes debt-related investments and can include other investments within diversified funds in for sale residential, self storage, land, data centers, senior living, healthcare, medical office and student housing.



#### **Property Type Diversification**

### **GEOGRAPHIC DIVERSIFICATION**

The diversification of the current funded Portfolio by geographic region is shown below and compared to the diversification of the NFI-ODCE at the end of the Quarter. The ODCE is a US-only index. The domestic portion of the Portfolio is well diversified relative to the ODCE. The 12.8% international exposure is appropriate for the risk and return profile of Fire and consistent with our long-term target.



## **Geographic Diversification**

#### Second Quarter 2016

Executive Summary: Second Quarter 2016 Performance Measurement Report Real Estate

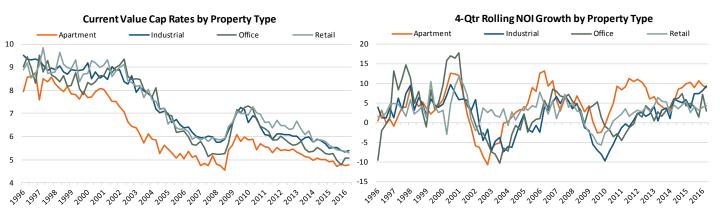
## MARKET UPDATE

#### **General**

- Economic activity increased during the second quarter of 2016 at an annual rate of 1.1%, 2% over 2Q15 levels. Growth during the quarter was chiefly supported by positive contributions by the consumer, with fractional help from trade. Favorable employment trends with moderate wage growth (+2.5% y/y) and strong sentiment (+4.4% annual rate) helped buoy consumer spending. Business investment continues to weigh on trade, reducing growth by 9.7% during the quarter. Leading indicators for the business sector; Purchasing Managers Index (49.4 with 50 and above signaling expansion), Durable Goods Orders (-6% y/y), and Industrial Production Index, point to more of the same to come from subsequent quarters.
- Macro indicators for U.S. real estate came in tepid during 2Q16 with residential housing starts and total construction investment flat to marginally down y/y. Building permits, which signal future construction activity, also fell 9% compared to same period 2015.

#### **Commercial Real Estate**

- 2Q16 saw \$63.5 billion in commercial real estate transaction volume or 41% of global activity. While solid, this represented a 16% drop compared to record 2015 levels. The U.S. decline was on trend with the broad moderation of global transaction activity during the quarter.
- CMBS issuances slowed to \$11.4 billion in 2Q16, less than half of the \$27.5 billion a year ago. Credit conditions remain relatively unchanged from 1Q, with the Fed's survey of senior loan officers showing stronger demand but tighter standards for commercial real estate loans.
- U.S. cities continue to be attractive targets for global investment capital. New York and Los Angeles (1<sup>st</sup> and 3<sup>rd</sup> respectively), accounted for 12% of global transactions. Foreign investment represented approximately 12% of total U.S. activity, with China overtaking Canada as the primary foreign capital source year-to-date.
- On average, industrial and multifamily transaction cap rates were essentially flat (0 and 2 bps compression respectively) for the first half of 2016 while hotel and office saw 15 and 11 basis point expansions respectively.



Executive Summary: Second Quarter 2016 Performance Measurement Report Real Estate

## **EXHIBIT A: COMPLIANCE MATRIX**

Category	Requirement	Portfolio Status
Benchmark	NFI-ODCE (net) +100 bps over full market cycles	Portfolio returns outperform the benchmark over the Quarter, three and five-year time periods.
	Core/Core Plus (4% of RE Allocation)	The portfolio is funded (market value) and committed at 73.5% of real estate allocation with a portfolio composition of
Portfolio Composition	Non Core (4% of RE Allocation)	41.6% core/core plus and 58.4% non-core. Based on market value, the core/core plus portfolio is funded at 48.8% and the non- core portfolio is funded at 51.2%.
Real Estate Allocation	Target of 8.0%	Funded (market value) and committed dollars place the portfolio at 5.9% of total
	Currently Funded at 4.5%	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 locations are in compliance.
Geographic Diversification	Diversified geographically Max 25% Ex-US	All geographic type locations are in compliance
LTV	65%	Portfolio is in compliance (42.9 %).
Manager Exposure	15% of real estate allocation	Manager exposure is in compliance based on market value.

Executive Summary: Second Quarter 2016 Performance Measurement Report Real Estate

## **EXHIBIT B: SECOND QUARTER 2016 FOIL**

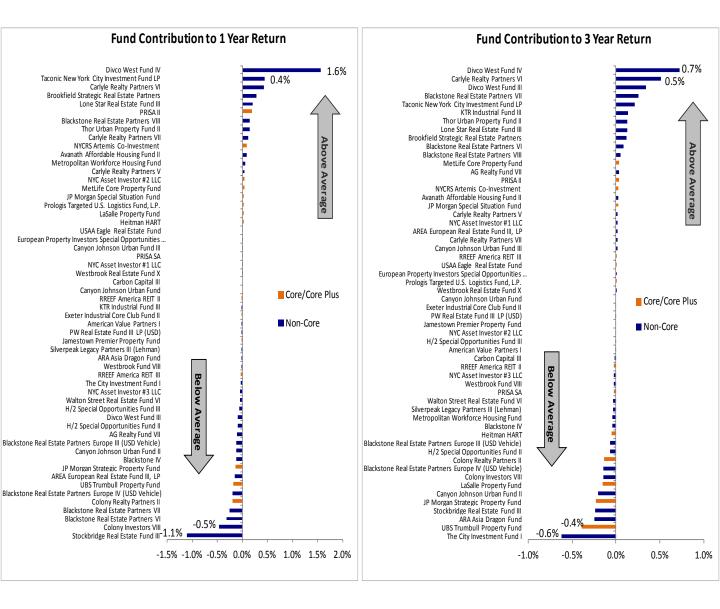


	Fund Name	Circl Draw Daver	Control Committeed	Contributions	Distributions	Marilian Malua	Carrier Bardalata	New
tage Year 2007	Fund Name	First Draw Down 12/20/2006	Capital Committed 5,000,000	Contributions 5,355,052	Distributions -166,526	Market Value 1,309,200	Equity Multiple 0.3	Net
2007	Colony Realty Partners II Exeter Industrial Core Club Fund II	5/20/2006	6,000,000	1,230,000	-100,528	1,309,200	1.0	-1
2016	Heitman HART	3/29/2018	9,000,000	12,511,710	-3,511,710		1.6	
						16,642,459		
2016	Jamestown Premier Property Fund	2/4/2016	8,000,000	2,225,028	-79,203	2,203,135	1.0	
2007	JP Morgan Special Situation Property Fund	1/2/2007	5,000,000	5,714,007	-1,457,843	6,283,904	1.4	
2007	JP Morgan Strategic Property Fund	12/5/2006	22,000,000	23,903,099	0	42,059,070	1.8	
2010	LaSalle Property Fund	7/1/2010	30,000,000	30,000,000	-6,187,638	40,574,865	1.6	1
2014	MetLife Core Property Fund	7/1/2014	15,000,000	15,000,000	-1,051,951	16,950,123	1.2	1
2013	NYC Asset Investor #2 LLC	7/9/2013	9,000,000	7,445,529	-1,125,534	7,847,708	1.2	1
2016	NYCRS Artemis Co-Investment	2/24/2016	11,000,000	1,215,783	0	1,661,702	n/a	
2007	PRISA II	6/30/2007	20,228,233	21,417,377	-4,191,411	27,141,288	1.5	
2006	PRISA SA	9/29/2006	7,000,000	7,530,220	-1,820,219	9,135,115	1.5	
2006	Prologis Targeted U.S. Logistics Fund	10/1/2006	5,000,000	6,427,714	-1,487,389	6,262,258	1.2	
2006	RREEF America REIT II	10/1/2006	7,000,000	9,178,399	-3,926,558	9,103,947	1.4	
2007	RREEF America REIT III - 1410	10/1/2007	5,000,000	5,000,000	-2,645,324	228,193	0.6	
2006	UBS Trumbull Property Fund	9/28/2006	27,000,000	35,669,475	-6,945,079	44,436,576	1.4	
2016	USAA Eagle Real Estate Fund	12/1/2015	12,000,000	7,523,490	0	7,980,952	1.1	1
	Core / Core Plus Portfolio		203,228,233	197,346,883	-34,596,385	241,045,722	1.4	
2008	AG Realty Fund VII	5/20/2008	15,000,000	14,100,000	-19,382,743	2,307,454	1.5	
2008	American Value Partners Fund I	10/18/2007	5,000,000	3,785,294	-2,743,553	1,251,312	1.1	
2008	ARA Asia Dragon Fund	7/9/2008	10,000,000	9,284,000	-11,886,344	10,990	1.3	
2008	AREA European Real Estate Fund III, LP	5/6/2008	15,000,000	15,243,750	-15,368,750	2,732,369	1.2	
2008	Avanath Affordable Housing Fund II	7/14/2015	2,220,000	2,055,934	-13,308,730	2,625,459	1.2	1
	÷				-7,567,889			
2004	Blackstone Fund IV	5/10/2004	5,000,000	6,406,782		1,427,769	1.4	:
2010	Blackstone Real Estate Partners Europe III (USD Vehicle)	10/24/2008	5,000,000	5,117,645	-3,656,297	3,443,234	1.4	:
2014	Blackstone Real Estate Partners Europe IV (USD Vehicle)	12/23/2013	26,000,000	21,387,416	-3,173,202	20,041,459	1.1	
2007	Blackstone Real Estate Partners VI	9/27/2007	10,000,000	11,111,548	-14,972,337	5,791,163	1.9	:
2012	Blackstone Real Estate Partners VII	3/31/2012	30,000,000	35,227,827	-21,734,983	30,917,136	1.5	:
2015	Blackstone Real Estate Partners VIII	8/18/2015	31,500,000	11,870,172	-110,329	13,047,652	1.1	2
2012	Brookfield Strategic Real Estate Partners	9/20/2012	15,000,000	15,558,353	-5,093,202	16,527,948	1.4	1
2003	Canyon Johnson Urban Fund	12/6/2002	10,000,000	9,060,242	-10,582,954	0	1.2	1
2005	Canyon Johnson Urban Fund II	5/11/2005	10,000,000	8,988,710	-3,298,648	701,877	0.4	-
2010	Canyon Johnson Urban Fund III	3/29/2010	5,000,000	4,931,163	-6,597,777	128,337	1.4	:
2009	Carbon Capital III	7/2/2009	10,000,000	10,378,522	-12,722,879	0	1.2	
2007	Carlyle Realty Partners V	8/27/2007	5,000,000	6,255,650	-6,917,252	1,804,954	1.4	
2011	Carlyle Realty Partners VI	9/14/2011	20,000,000	18,615,372	-19,612,721	11,665,221	1.7	:
2014	Carlyle Realty Partners VII	6/30/2014	15,000,000	6,265,401	-34,927	6,954,914	1.1	:
2007	Colony Investors VIII	9/18/2007	20,000,000	21,249,679	-5,553,373	3,945,353	0.4	
2012	Divco West Fund III	12/30/2011	30,000,000	29,429,127	-41,815,704	8,162,229	1.7	:
2012	Divco West Fund IV	1/15/2014	30,000,000		-9,681,377		1.5	
				29,131,906		33,874,070		
2016	European Property Investors Special Opportunities Fund	12/18/2015	10,059,238	1,473,151	-145,035	1,300,458	1.0	
2011	H/2 Special Opportunities Fund II	1/31/2011	10,000,000	10,000,001	-6,058,806	7,904,251	1.4	:
2015	H/2 Special Opportunities Fund III	12/29/2014	15,000,000	8,626,420	0	9,233,527	1.1	:
2013	KTR Industrial Fund III	6/28/2013	10,000,000	4,369,869	-6,896,859	18,742	1.6	4
2014	Lone Star Real Estate Fund III	5/20/2014	25,000,000	23,182,640	-7,971,272	20,116,796	1.2	:
2007	Metropolitan Workforce Housing Fund	7/13/2007	3,500,000	3,503,257	-1,583,078	2,689,595	1.2	
2013	NYC Asset Investor #1 LLC	6/25/2013	5,000,000	5,346,203	-585,332	6,046,175	1.2	:
2013	NYC Asset Investor #3 LLC	9/20/2013	6,000,000	2,053,942	-23,481	2,074,041	1.0	
2016	PW Real Estate Fund III LP	n/a	9,562,261	0	0	-84,156	n/a	1
2008	Silverpeak Legacy Partners III	5/28/2008	5,000,000	2,216,844	-208,285	670,891	0.4	-
2008	Stockbridge Real Estate Fund III	9/9/2008	13,500,000	13,499,074	0	17,902,694	1.3	
2012	Taconic New York City Investment Fund LP	7/5/2012	20,000,000	8,272,728	-4,863,635	9,432,181	1.7	:
2004	The City Investment Fund I	3/16/2004	35,000,000	34,515,181	-34,858,784	122,653	1.0	
2009	Thor Urban Property Fund II	10/30/2008	5,000,000	6,469,584	-5,584,936	4,179,344	1.5	:
2009	Walton Street Real Estate Fund VI	4/27/2009	5,000,000	4,432,393	-4,013,570	2,709,938	1.5	
2005	Westbrook Real Estate Fund VIII	12/28/2009	5,000,000	5,928,744	-6,780,163	984,782	1.3	
2010	Westbrook Real Estate Fund X	12/28/2009 n/a	8,000,000	5,928,744	-0,780,103	538	1.5 n/a	
2010		n/a	515,341,499			252,663,350		
	Non-Core Portfolio		515,341,499 21,720,000	429,344,524 10,560,268	-302,080,477 -4,326,631	252,663,350 8,228,068	1.3 1.2	
	Small Emerging Manager		21.720.000	10.560.268		8.228.068	1.2	

Source: PCG historical cash flow data. TTG cash flow data from Fund Managers, effective 2005. Note: The equify multiples and IRRs contained in this report are interim calculations based upon information provided by the investment managers of the New York Gity Retirement Systems, including cash flows and quarterly unaudited, or audited, valuations. The IRR calculated in early years of a fund life is not meaningful given the I-curve effect and can be significantly impacted by the timineg of cash flows, investment strategy, investment pacing, and fund life. The calculations are not necessarily indicative of total fund performance, which can only be determined after the fund is liquidated and all capital contributed and earnings have been distributed to the investor. All data supplied is as of June 30, 2016.

Executive Summary: Second Quarter 2016 Performance Measurement Report Real Estate

## **EXHIBIT C : ATTRIBUTION**





# **Infrastructure Monitoring Report**

For the period ended June 30, 2016

**Report Prepared For:** 

New York City Fire Department Pension Fund, Subchapter 2





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

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



# I. Executive Summary

The New York City Fire Department Pension Fund, Subchapter 2 ("NYCFDPF") 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 NYCFDPF 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 NYCFDPF on October 20, 2014 to provide infrastructure advisory services for prospective investment opportunities and monitoring and reporting services for existing and new investments.

Since inception through June 30, 2016, the Program has committed US\$88.0 million to six partnership investments (the "Portfolio"). This quarterly monitoring report covers the performance of the Portfolio as of June 30, 2016 as well as significant activity that occurred during the second quarter of 2016.

## **Allocation Summary**

NYCFDPF has a Real Assets allocation target of 5% (plus or minus 2%) of total pension assets. Infrastructure is a component asset class within the NYCFDPF Real Assets investment program.

As of June 30, 2016, the market value of NYCFDPF Real Assets Program represented approximately 4.7% of total pension assets. The market value of NYCFDPF Infrastructure Program represented approximately 0.2% of total pension assets, a two basis point increase from the prior quarter.

As the Program matures, the percentage of its market value relative to the total NYCFDPF pension assets as well as total Real Assets will continue to increase.

US\$ in millions*	June 30, 2016	March 31, 2016	June 30, 2015	Quarterly Change	Yearly Change
Total Pension Assets <sup>*</sup>	\$10,887.0	\$10,766.0	\$10,927.0	\$121.0	(\$40.0)
Total Real Assets	\$517.0	\$502.0	\$452.0	\$15.0	\$65.0
% Allocation to Real Assets (Target of 5% +/- 2%)	4.7%	4.7%	4.1%	+ 9 bps	+ 61 bps
Total Infrastructure Assets	\$27.2	\$24.7	\$17.7	\$2.5	\$9.5
% Allocation to Infrastructure vs. Total Pension Assets	0.2%	0.2%	0.2%	+ 2 bps	+ 9 bps
% Allocation to Infrastructure vs. Total Real Assets	5.3%	4.9%	3.9%	+ 35 bps	+ 134 bps

\*NYCFDPF total Pension Assets and total Real 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 June 30, 2016, the Infrastructure Program has achieved a Total Value to Paid-In multiple of 1.1x invested capital and an IRR of 11.1%. Note that, given the relative immaturity of the Portfolio and underlying fund investments, the current performance to-date is not meaningful.

US\$ in millions *	June 30, 2016	March 31, 2016	June 30, 2015	Quarterly Change	Yearly Change
Number of Managers	5	5	4	0	1
Number of Investments	6	5	4	1	2
Committed Capital <sup>1</sup>	\$88.0	\$69.0	\$47.0	\$19.0	\$41.0
Contributed Capital	\$25.4	\$23.3	\$17.4	\$2.1	\$8.0
Distributed Capital	\$1.3	\$1.2	\$0.6	\$0.1	\$0.6
Market Value	\$27.2	\$24.7	\$17.7	\$2.5	\$9.5
Total Value	\$28.5	\$25.8	\$18.3	\$2.6	\$10.1
Total Gain/(Loss)	\$3.1	\$2.5	\$0.9	\$0.5	\$2.2
Unfunded Commitment	\$63.2	\$46.1	\$29.6	\$17.1	\$33.6
Exposure <sup>2</sup>	\$90.4	\$70.7	\$47.2	\$19.7	\$43.1
DPI <sup>3</sup>	0.1x	0.1x	0.0x	0.0x	0.0x
TVPI <sup>4</sup>	1.12x	1.11x	1.05x	0.01x	0.07x
IRR <sup>5</sup>	11.1%	11.7%	12.3%	-0.6%	-1.2%
TVPI Net of StepStone Fees <sup>6</sup>	1.12x	1.11x	1.05x	0.01x	0.07x
IRR Net of StepStone Fees <sup>6</sup>	10.9%	11.6%	12.1%	-0.6%	-1.2%

\* Note that amounts may not total due to rounding. Past performance is not necessarily indicative of future results.

<sup>1</sup> Committed Capital is presented net of any commitment releases or expirations and reflects foreign currency exchange rate fluctuations. Note that the Base/(US\$) committed capital for foreign currency-denominated investments as of respective quarter-end dates is calculated as follows: (total net amount funded in Base currency) + (unfunded commitment in Local currency \* quarter-end exchange rate). StepStone utilizes S&P Capital IQ as the source for quarter-end exchange rates to calculate committed capital.
<sup>2</sup> Exposure represents the sum of Market Value and Unfunded Commitment.

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

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

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

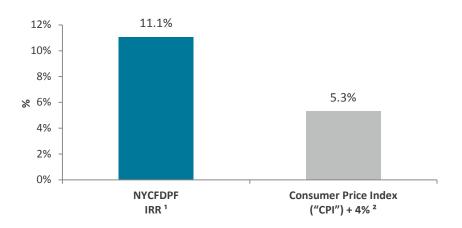
<sup>6</sup> TVPI and IRR Net of StepStone fees represent TVPI and IRR net of fees paid by NYCFDPF to StepStone through the quarter-end date.



## Portfolio Performance vs. Benchmarks

The performance benchmark for the Infrastructure Portfolio is to meet or exceed the Consumer Price Index ("CPI") plus 4% net of fees over a rolling 5-year period. The Infrastructure Portfolio is expected to generate a total return, net of investment management fees, of at least 6.5%.

As of June 30, 2016, the Program outperformed the benchmark by 5.8%. However, as noted previously, given the relative immaturity of the Portfolio, the current performance to-date versus benchmarks is not meaningful. The following graph illustrates Portfolio IRR performance versus the benchmark as of June 30, 2016.



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

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

## **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 Co	ommitment	Ехро	sure
As of June 30, 2016 (US\$ in millions)	\$	% of Total	\$	% of Total	\$	% of Total
By Strategy:						
Core	27.2	100.0%	63.2	100.0%	90.4	100.0%
Non-Core	-	0.0%	-	0.0%	-	0.0%
Total	27.2	100.0%	63.2	100.0%	90.4	100.0%
By Geographic Focus:						
Global	12.0	44.1%	23.5	37.2%	35.5	39.3%
OECD	15.2	55.9%	39.7	62.8%	54.9	60.7%
Total	27.2	100.0%	63.2	100.0%	90.4	100.0%
By Industry Focus:						
Diversified	25.5	93.9%	54.9	87.0%	80.5	89.0%
Energy	1.7	6.1%	8.2	13.0%	9.9	11.0%
Total	27.2	100.0%	63.2	100.0%	90.4	100.0%



# **II. Infrastructure Market Overview**

## **Market Overview**

## North America

Q2 2016 saw the financial close of the landmark NYC LaGuardia Airport Terminal Public Private Partnership ("P3") project. The US\$ 4 billion deal is the country's largest P3 to date and has prompted grantors across the country to look at similar deals. Increasingly, public agencies such as Los Angeles Metropolitan Authority and Washington DC Office of Private Public Partnerships are relying on unsolicited proposals to generate potential P3 transactions. Notable P3 legislation has been passed and signed into law in Kentucky, Tennessee and New Hampshire. Kentucky's new mandate in particular not only enables counties and regional authorities to enter into P3 agreements, but also allows P3s to be used across all sectors. Offshore wind has gradually been gaining traction with some states passing or considering legislation that would allow offshore wind projects to become economically viable. For example, Massachusetts voted to move forward with a bill that would require up to 2GW of offshore wind procurement by 2027.

## Europe

While Britain's vote to leave the European Union in June ("Brexit") has created shorter term market uncertainty, stemming from currency volatility and concerns about rising funding costs, economic linkages between the UK and EU are significant and very longstanding. It is expected that interconnectivity between the economies of the UK and Europe will endure. Given the nature of the infrastructure asset class, it is expected that the impact of Brexit will be relatively less than for other sectors in the economy. Typically revenues are not exposed to market volatility as they are structured as long term contracts or subject to regulation. While some infrastructure assets might have GDP exposure (such as airports), it is expected that long-term demographic trends and the essential need of much travel will underpin revenues in these assets. Financial investors have been active in European renewables, including UK offshore wind, drawn to long-term stable cash flows. A large pipeline of offshore wind projects will require funding over the next 15 months. Projects in Germany, the Netherlands, Belgium and France all offer investors opportunities in both debt and equity financing.

### Australia

In Australia, the 50-year lease of Port of Melbourne was won in September by a consortium consisting of QIC, Future Fund, GIP and OMERS, at a reported price of A\$9.7bn and an estimated 25x EBITDA multiple. This deal further continues the trend of the sector being highly contested by a range of infrastructure investors, with transaction outcomes over the past 5 years for Port of Brisbane, Port Botany and Port Kembla, Port of Newcastle, and Port of Darwin ranging from estimated EBITDA multiples of 24x to 27x. And, in the electricity sector, the AusGrid transaction introduced new uncertainty for foreign investors into critical infrastructure assets. Chinese bidders State Grid and Cheung Kong Infrastructure were blocked from the sale process due to cited national security considerations. This has delayed the sale process for Endeavour, the third transaction in a series of privatizations for New South Wales' electricity providers.

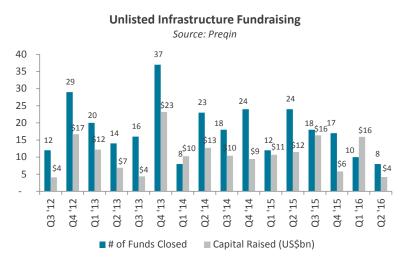


## Infrastructure Fundraising

The level of institutional capital secured by unlisted infrastructure funds that reached a final close in Q2 2016 was significantly lower compared with Q1 2016.

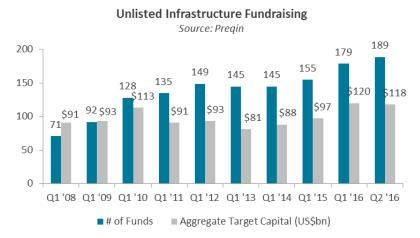
During the first quarter, eight funds held final closings. Aggregate capital raised was US\$4.2 billion. The amount represented a year over year decrease of 63% compared to Q2 2015, when 24 funds held a final close raising US\$11.5 billion.

The largest fund to reach a final closing during Q2 was Carlyle Power Partners II, which raised \$1.5 billion of commitments. The fund will pursue investments in the US power generation sector in both traditional and renewable energy opportunities. Additionally, Meridiam Infrastructure Europe III raised  $\leq$ 1.3 billion. The fund will invest in greenfield-stage public-private partnership transactions in Europe.



Fund	General Partner	Siz	e (mn)	Location Focus
Carlyle Power Partners II	Carlyle Group	\$	1,500	North America
Meridiam Infrastructure Europe III	Meridiam	€	1,300	Europe
SMA 5	Macquarie Infrastructure Debt Investment	So €	500	UK
Meridiam Transition Fund	Meridiam	€	350	France
Star America Infrastructure Partners	Star America Infrastructure Partners	\$	300	North America

At the end of the second quarter, Preqin observed 189 funds in market targeting aggregate capital commitments of US\$118 billion. The largest funds in market include: Brookfield Infrastructure Fund III, targeting US\$14 billion, and Global Infrastructure Partners III, targeting US\$12.5 billion.





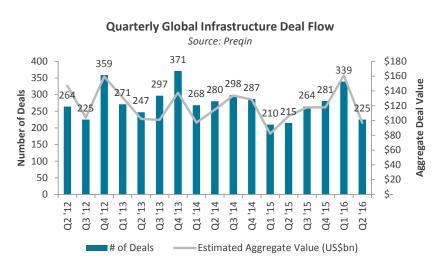
## **Major Transactions**

During the second quarter, 225 infrastructure deals were completed with an estimated aggregate deal value of US\$97 billion, representing a 40% decrease compared to the prior quarter. Several significant infrastructure transactions completed in the second quarter are presented below.

In April 2016, PT Pertamina and Rosneft Oil Company closed a \$13.0 billion joint venture deal to construct an oil refinery in Indonesia.

In June 2016, HOCHTIEF Concessions and J. Murphy and Sons closed on a £2.4 billion deal to construct a 23-mile mining tunnel in North Yorkshire, UK.

In June 2016, Sacyr Vallehermoso was awarded a public-private partnership contract for the construction and concession of the 186km Rome-Latina freeway in Italy valued at €2.8 billion.



In June 2016, TransCanada Corporation was awarded the contract to construct, own, and operate the Sur de Texas-Tuxpan natural gas pipeline in Mexico. The deal is valued at \$2.1 billion.

In April 2016, Cheung Kong Infrastructure Holdings agreed to purchase select midstream assets in Lloydminster, Canada from Husky Energy in the amount of \$1.7 billion representing a 65% equity stake.



# III. Portfolio Review

## **Quarterly Highlights**

New Investment Commitments - During the second quarter of 2016, the Program closed on one new investment commitment totaling US\$19.0 million. This is shown in the table below.

US\$ in millions						
Investment	Month and Year Closed	Vintage Year	Strategy	Geographic Focus	Industry Focus	Committed Capital
Brookfield Infrastructure Fund III, L.P.	April 2016	2016	Infrastructure	Global	Diversified	\$19.0
Total						\$19.0

- Subsequent Investment Commitments Subsequent to quarter-end through October 21, 2016, the Program has not . closed on any additional investment commitments.
- Cash Outflow Decreased During the second quarter of 2016, the Program made US\$2.1 million of contributions and • received US\$0.1 million of distributions, for a net cash outflow of US\$2.0 million. This compared to a net cash outflow of US\$2.4 million during the prior quarter. Net cash flow is expected to remain negative for the next several years as the Program's committed capital is drawn down for investments, fees and expenses by fund managers.
- Valuation Increased During the second quarter of 2016, net of cash flow activity, the valuation of the Portfolio . increased by approximately US\$0.5 million, or 2.0%, from the prior quarter. The valuation increase reflects the increase in value of underlying investments in Brookfield Infrastructure Fund II, Brookfield Infrastructure Fund III, IFM Global Infrastructure Fund, and KKR Global Infrastructure Investors II.
- New Underlying Fund Investments During the second quarter of 2016, seven new investment positions were added to the Portfolio. The top five new investments in terms of the Portfolio's exposed invested capital are below.

033 111 111110115								
Company	Fund(s)	Investment Date	Stage	Industry	Country	Exposed Invested Capital		TVM
Columbia Renewable Power	Brookfield Infrastructure Fund III, L.P.	Jan-16	Private	Renewables	Colombia	1.2	1.4	1.1x
U.S. Renewable Power	Brookfield Infrastructure Fund III, L.P.	Apr-16	Private	Renewables	United States	0.8	0.8	1.0x
PEMEX Midstream	KKR Global Infrastructure Investors II L.P.	Jun-16	Private	Energy	Mexico	0.7	0.7	1.0x
Peruvian Toll Roads	Brookfield Infrastructure Fund III, L.P.	Jun-16	Private	Transportation	Peru	0.6	0.6	1.0x
Arrowhead Gulf Coast Holdings	First Reserve Energy Infrastructure Fund II, L.P.	May-16	Private	Energy	United States	0.5	0.5	1.0x

US\$ in millions

No Exits – There were no exits of investment positions during the quarter.



#### Performance by Vintage Year

The following table illustrates the Portfolio's since-inception investment performance by vintage year as of June 30, 2016. Note that the performance of funds that are less than one year old is not meaningful.

Vintage Year	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Total Value	Total Gain/ (Loss)	Unfunded Commitment	Exposure	DPI	TVPI	IRR
2013	\$15.0	\$9.1	\$1.0	\$10.3	\$11.3	\$2.2	\$6.0	\$16.3	0.1x	1.2x	16.2%
2014	32.0	14.7	0.2	15.2	15.5	0.8	17.7	32.9	0.0x	1.1x	5.6%
2016	41.0	1.7	-	1.7	1.7	0.0	39.5	41.2	NM	NM	NM
Total	\$88.0	\$25.4	\$1.3	\$27.2	\$28.5	\$3.1	\$63.2	\$90.4	0.1x	1.1x	11.1%

As of June 30, 2016 (US\$ in millions)

### Performance by Strategy and Industry Focus

The following table illustrates the Portfolio's since-inception investment performance by strategy and industry focus as of June 30, 2016.

#### As of June 30, 2016 (US\$ in millions)

Strategy/Industry	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Total Value	Total Gain/ (Loss)	Unfunded Commitment	Exposure	DPI	турі	IRR
Core	\$88.0	\$25.4	\$1.3	\$27.2	\$28.5	\$3.1	\$63.2	\$90.4	0.1x	1.1x	11.1%
Diversified	78.0	23.6	1.2	25.5	26.7	3.2	54.9	80.5	0.1x	1.1x	11.9%
Energy	10.0	1.8	0.1	1.7	1.7	(0.1)	8.2	9.9	0.0x	0.9x	(8.4%)
Total	\$88.0	\$25.4	\$1.3	\$27.2	\$28.5	\$3.1	\$63.2	\$90.4	0.1x	1.1x	11.1%

## Performance by Geographic Focus

The following table and charts illustrate the Portfolio's since-inception investment performance by geographic focus as of June 30, 2016.

As of June 30, 2016 (US\$ in millions)

Geographic Focus	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Total Value	Total Gain/ (Loss)	Unfunded Commitment	Exposure	DPI	τνρι	IRR
Global	\$34.0	\$10.6	\$1.0	\$12.0	\$13.0	\$2.5	\$23.5	\$35.5	0.1x	1.2x	17.6%
OECD	54.0	14.8	0.2	15.2	15.4	0.6	39.7	54.9	0.0x	1.0x	4.3%
Total	\$88.0	\$25.4	\$1.3	\$27.2	\$28.5	\$3.1	\$63.2	\$90.4	0.1x	1.1x	11.1%



## **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:

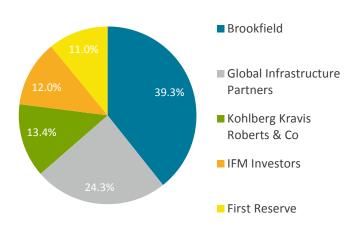
- Core Infrastructure Investments: 60% to 100%; and
- Non-Core Infrastructure Investments: 0% to 40%.

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	Exp	osure
As of June 30, 2016 (US\$ in millions)	\$	% of Total	\$	% of Total	\$	% of Total
By Strategy:						
Core	27.2	100.0%	63.2	100.0%	90.4	100.0%
Non-Core	-	0.0%	-	0.0%	-	0.0%
Total	27.2	100.0%	63.2	100.0%	90.4	100.0%
By Geographic Focus:						
Global	12.0	44.1%	23.5	37.2%	35.5	39.3%
OECD	15.2	55.9%	39.7	62.8%	54.9	60.7%
Total	27.2	100.0%	63.2	100.0%	90.4	100.0%
By Industry Focus:						
Diversified	25.5	93.9%	54.9	87.0%	80.5	89.0%
Energy	1.7	6.1%	8.2	13.0%	9.9	11.0%
Total	27.2	100.0%	63.2	100.0%	90.4	100.0%

### **By Investment Manager**

As of June 30, 2016, the Program had made six investment commitments to five managers. NYCFDPF seeks to limit its exposure to any single manager to no more than 10% of the total Real Assets Program when fully invested. As the Program matures and closes on additional commitments, the single manager exposure is expected to decline significantly. Below is the Portfolio's current exposure by manager.

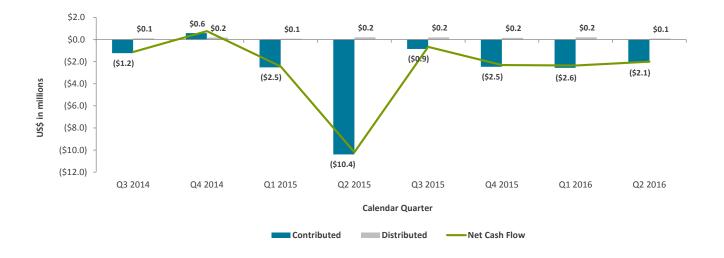




## **Portfolio Cash Flow Analysis**

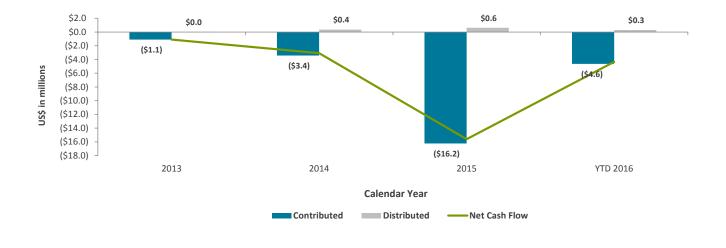
### **Quarterly Cash Flow Activity**

During the second quarter of 2016, the Program made US\$2.1 million of contributions and received US\$0.1 million of distributions, for a net cash outflow of US\$2.0 million. As of June 30, 2016, six fund investments in the Portfolio had cash flow activity. As the Program's commitment and investment activity increases, net cash outflow is expected to increase. The graph below illustrates cash flow activity since inception by calendar quarter.



### **Annual Cash Flow Activity**

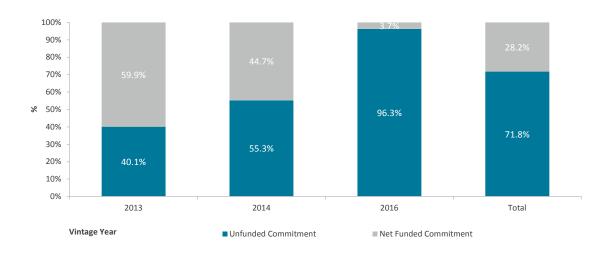
During the first six months of 2016, the Program made US\$4.6 million of contributions and received US\$0.3 million of distributions, for a net cash outflow of US\$4.4 million. The graph below illustrates cash flow activity since inception by calendar year.





### 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 June 30, 2016. Overall, the Portfolio was 71.8% 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 June 30, 2016. Overall, the Portfolio had US\$63.2 million of unfunded commitments as of quarter-end.



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

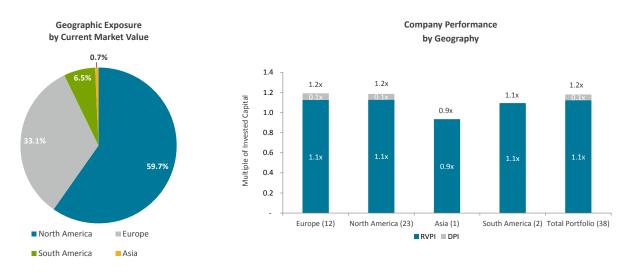


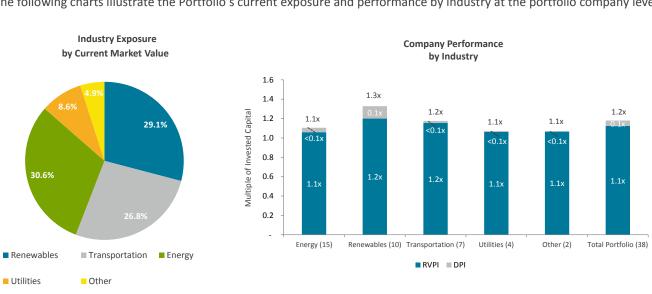
## **Portfolio Company-Level Analysis**

As of quarter-end, the Portfolio had exposure to 38 unique portfolio companies/investment positions. As the Portfolio matures, the number of unique portfolio companies/investment positions is expected to increase significantly. On the individual fund level, all current investments are within the single investment limitation of 15% of total fund size. The Program's individual portfolio investment exposure is relatively concentrated as a result of the relative immaturity of the Program.

## **Geographic Exposure and Performance**

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





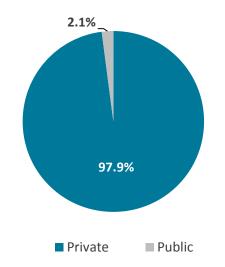
## **Industry Exposure and Performance**

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



## **Public Market Exposure**

As of quarter-end, publicly traded investments comprised 2.1% of the Portfolio's exposed market value. The following chart illustrates the current public market exposure at the portfolio company level.



## Public Market Exposure Current Market Value



# IV. Risk Management Matrix

Category	Requirement	Status	Status Notes
Allocation	NYCFDPF has a Real Assets allocation target of 5% (plus or minus 2%) of total pension assets. Infrastructure is a component asset class within the NYCFDPF Real Assets investment program.	✓	The market value of NYCFDPF Real Assets Program currently represents approximately 4.7% of total pension assets and the market value of NYCFDPF Infrastructure Program represents approximately 0.2% of total pension assets. As the Program matures, its market value as a percentage of the total NYCFDPF pension assets and the total Real Assets Program is expected to increase.
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 is expected to generate a total return, net of investment management fees, of at least 6.5%.	✓	As of June 30, 2016, the Portfolio outperformed the benchmark by 5.8%. However, given the relative immaturity of the Portfolio, the current performance to-date versus benchmarks is not meaningful.
Strategy Diversification	Core Infrastructure Investments: 60-100% Non-Core Infrastructure Investments: 0-40% Actual percentages may differ substantially from these targets during the initial years of the Program.	✓	The Program is in compliance with the Core/Non-Core allocation ranges. Currently the Program only has exposure to 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.	✓	Given the relative immaturity of the Portfolio, it is not yet diversified by asset type. The asset types and geographic location of current Portfolio investments are in compliance with the Program's Investment Policy Statement and Permissible Markets.
Leverage	The average leverage of all investments in the Program is to be no higher than 65%.	$\checkmark$	The Program is in compliance with the average leverage limitation. The current leverage level is 40.4% <sup>*</sup> .
Single Investment Size & Manager Diversification	The maximum commitment to a single investment is limited to no more than 15% of the aggregate committed capital of each fund. The maximum commitment to a single manager is limited to 10% of the total Real Assets Program allocation when fully invested.	~	On the individual fund level, all current investments are in compliance with the single investment limitation of 15% of total fund size. The Program is in compliance with the single manager limitation of 10% of the total Real Assets Program. The Program's manager exposure is currently relatively concentrated as a result of the relative immaturity of the Program. Manager diversification is expected to increase as the Program closes on new investment commitments.

\*The Program's leverage level is calculated by using a weighted average of each underlying investment's leverage and Net Asset Value as of June 30, 2016.

## **APPENDICES**:

**Basket Clause** 

## FIRE - BASKET/NON BASKET SUMMARY

As of September 30th, 2016	Adju	isted Fund Po	olicy	Fund Actual (PE & RE on an invested basis)				
	Non			Non				
<u>Equity</u>	Basket*	Basket*	Total	Basket*	Basket*	Total		
Domestic Equity	29.7%	0.0%	29.7%	31.2%	0.0%	31.2%		
Non-U.S. Equity	10.0%	6.5%	16.5%	10.0%	6.6%	16.6%		
Private Equity	0.0%	7.0%	7.0%	0.0%	7.1%	7.1%		
Real Assets	4.6%	0.0%	4.6%	4.6%	0.0%	4.6%		
REITS	2.8%	0.2%	3.0%	3.2%	0.2%	3.4%		
Hedge Funds	0.0%	4.0%	4.0%	0.0%	4.0%	4.0%		
Total Equity	47.1%	17.7%	64.8%	49.0%	18.0%	67.0%		
Fixed Income								
Core+5	20.8%	0.5%	21.3%	16.8%	0.5%	17.3%		
U.S. Gov't Sector	4.6%	0.0%	4.6%	2.3%	0.0%	2.3%		
Mortgage Sector	7.3%	0.0%	7.3%	5.5%	0.0%	5.5%		
Credit Sector	8.9%	0.5%	9.4%	8.3%	0.5%	8.8%		
High Yield	2.7%	0.8%	3.4%	3.1%	0.8%	3.9%		
Bank Loans	0.0%	1.7%	1.7%	0.0%	1.7%	1.7%		
TIPS	4.5%	0.5%	5.0%	4.4%	0.5%	4.9%		
Convertibles	1.0%	0.0%	1.0%	0.5%	0.0%	0.5%		
Opportunistic	0.0%	2.8%	2.8%	0.0%	2.8%	2.8%		
Other Fixed Income	0.0%	0.0%	0.0%	2.1%	0.0%	2.1%		
Total Fixed Income	29.0%	6.2%	35.2%	26.9%	6.2%	33.1%		
Total Fund	76.1%	23.9%	100.0%	75.9%	24.2%	100.0%		
Remaining Capacity		1.1%			0.8%			

Liquidity Analysis

## Fire Liquidity Profile - Static Analysis

AUM as of September 30, 2016

		Liquid Assets			
	Current MV	Today	1 Year	2 Years	
PUBLIC EQUITY	\$5,807	\$5,807	\$5,807	\$5,807	
U.S.	3,926	3,926	3,926	3,926	
EAFE Equity	1,111	1,111	1,111	1,111	
Emerging Markets	770	770	770	770	
PUBLIC FIXED INCOME	\$3,433	\$3,360	\$3,415	\$3,415	
Short Term Securities	144	144	144	144	
U.S. Government	265	265	265	265	
Mortgages	205	205	205	205	
Core Mortgages	622	622	622	622	
ETI	91	17	72	73	
Credit - Investment Grade	1,126	1,126	1,126	1,126	
Corporate - High Yield	443	443	443	443	
Corporate - Bank Loans	190	190	190	190	
UST - Inflation Protected	552	552	552	552	
ALTERNATIVE ASSETS	\$2,098	\$235	\$683	\$728	
Private Equity	809	0	0	0	
Private Real Estate	483	0	0	0	
Infrastructure	36	0	0	0	
<b>Opportunistic Fixed Income</b>	313	235	313	313	
Hedge Funds	457	0	370	415	
Total Assets	\$11,338	\$9,401	\$9,905	\$9,950	
Total Illiquid \$		\$1,937	\$1,433	\$1,388	
Total Illiquid %		17.1%	12.6%	12.2%	
Unfunded PE Commitments	\$518				
Unfunded RE Commitments	305				
Total commitments \$	\$823				
Total commitments %	7.3%				

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## Fire Liquidity Profile - Static Analysis

AUM as of September 30, 2016

Denominator Effect - Decrease AUM by One-Third			
Total Illiquid \$	\$1,937	\$1,433	\$1,388
Total Illiquid %	25.6%	19.0%	18.4%
Note: Assumes zero realizations no new commitments and a fiv	va-vaar investment neri	od: funded out of liqu	ide

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

		Liquid Assets		
	Current MV	Today	1 Year	2 Years
Total Assets	\$11,338	\$9,401	\$9,905	\$9,950
Private Equity, Real Estate and Opp	portunistic Fixed Incor	ne Stress Case		
Unfunded PE Commitments Drawn			\$104	\$207
Unfunded RE Commitments Drawn			61	122
Total commitments \$			\$165	\$329
Total commitments %		_	1.5%	2.9%
Total Illiquid \$			\$1,597	\$1,717
Total Illiquid %			14.1%	15.1%
Note: Assumes zero realizations, no r	new commitments and a	a five-year investment pe	riod; funded out of liqu	iids

Denominator Effect - Decrease AUM by One-Third			
Total Illiquid \$	\$1,937	\$1,597	\$1,717
Total Illiquid %	25.6%	21.1%	22.7%
Note: Assumes zero realizations, no new commitments and a five	e-year investment peri	od; funded out of liqu	ids

12/5/16