

LPFA Investment Performance Report as at 31st December 2016

Final Month End Data

Purpose and summary

This report sets out LPFA investment performance data as at 31st December 2016.

31 December 2016	Funds		Exposure		Policy Portfolio		
	£m	%	£m	%	Benchmark	Minimum	Maximum
Equities:	2,150.04	41.0%	2,519.08	48.0%	47.5%	40.0%	60.0%
Fixed Income:	0.00	0.0%	0.00	0.0%	2.5%	0.0%	15.0%
Credit:	188.11	3.6%	188.11	3.6%	7.5%	0.0%	10.0%
Private Equity:	504.77	9.6%	504.77	9.6%	7.5%	5.0%	15.0%
Real Estate:	262.80	5.0%	262.80	5.0%	10.0%	5.0%	15.0%
Infrastructure:	389.90	7.4%	389.90	7.4%	7.5%	5.0%	15.0%
Total Return:	756.62	14.4%	756.62	14.4%	15.0%	0.0%	20.0%
Cash:	845.97	16.1%	476.94	9.1%	2.5%	0.0%	10.0%
<i>Diversified Growth Fund:</i>	<i>144.48</i>	<i>2.8%</i>	<i>144.48</i>	<i>2.8%</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
Total	5,242.69	100%	5,242.69	100%	100.0%		

Net Asset Values and LPFA Asset Mix at 31st December 2016:

- The asset values are based on final month end data from the custodian JP Morgan.
- In the funds table final asset data from JP Morgan has been grouped by asset class:
 - Total return includes the Insight bonds plus hedge fund and the Blackrock hedge fund
 - Commodities are included in the infrastructure line
 - The Blackrock co-investment is included in credit
 - Cash includes the mark to market of the currency hedge and Liability Driven Investment (LDI) portfolio
- The data in the exposure table has been produced by adjusting the funds table:
 - Net synthetic equity exposure of £369m has been removed from the cash line and added to the equities line
 - Derivative mark to market values, the Insight LDI fund and the currency hedge remain treated as being functionally equivalent to cash and included within the cash line

For the purposes of the sensitivity analysis in this report the exposure table is adjusted further to reflect the diversified growth fund assets as follows:

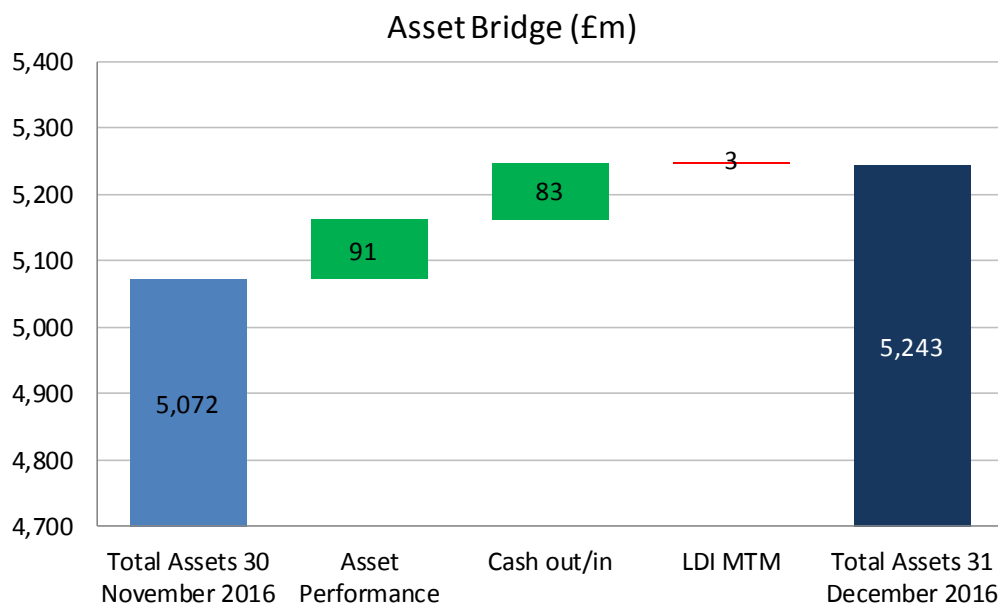
- Diversified growth fund assets split 44% public equities, 40% fixed income, 7% cash, 6% hedge funds and 3% real estate.

Adjusted Risk Exposure

31 December 2016	Risk Exposure		Policy Portfolio		
	£m	%	Benchmark	Minimum	Maximum
Equities:	2,582.32	49.3%	47.5%	40.0%	60.0%
Fixed Income:	57.73	1.1%	2.5%	0.0%	15.0%
Credit:	188.11	3.6%	7.5%	0.0%	10.0%
Private Equity:	504.77	9.6%	7.5%	5.0%	15.0%
Real Estate:	266.50	5.1%	10.0%	5.0%	15.0%
Infrastructure:	389.90	7.4%	7.5%	5.0%	15.0%
Total Return:	765.62	14.6%	15.0%	0.0%	20.0%
Cash:	487.74	9.3%	2.5%	0.0%	10.0%
Total	5,242.69	100%	100%		

- The risk exposure table excludes the interest rate and inflation rate exposure of the LDI portfolio. As at end December 2016 the LDI portfolio has a £0.7m per basis point interest rate exposure (PV01) and a £5.3m per basis point inflation rate exposure (IE01). The risk exposure table and the interest rate and inflation rate exposure of the LDI portfolio have been used to produce the sensitivity information on page 6.
- The LPFA credit portfolio is invested in relatively illiquid sub investment grade credit.
- Around 15% of Public and Private Equity is invested in the UK equity market, with the majority of equity exposure taken in the United States.
- LPFA has established a foreign exchange hedging program to reduce currency risk but overall, after allowance for that program, LPFA is short of around GBP 1.6bn Sterling, mainly against USD (GBP 1bn) and EUR (GBP300m).

The change in total net asset value over December 2016 is explained as follows:



Note: Total assets at 31st December 2016 are based on **final data received from JP Morgan**, the December solvency report reflected assets based on preliminary data from JP Morgan.

Recommendations:

[1] Executive Committee is asked to note this report.

Report date: 31st December 2016

Lead Officer: Tom Richardson

Compliance Checks

Governance issues:

The monthly Investment Performance report is provided to all Board Members and is published on LPFA’s website monthly. It is a key document to track the financial development of the fund.

Financial implications:

Implicit in this report.

Legal implications:

None – The production of this report is voluntary in nature.

Risk implications:

This report is part of the process to manage and monitor the key investment and financial risks facing the fund.

Equalities impact:

Scheme Members will have the opportunity to request alternative formats as required.

Social, environmental, health and ethical issues:

The move to greater online publication is in line with LPFA’s environmental initiatives.

Communication issues:

The report is published monthly on the LPFA website.

Other relevant / supporting documentation:

None.

Appendix 1 – JP Morgan’s Investment Performance (Final)
Performance grouped by benchmark (Modified Dietz Method)

Portfolio Name	% Of	Current Value	Exposure	Month	Trailing 3m	YTD	FYTD	Year	3 yr	5 yr	Inception
MSCI All Country World				3.30	6.38	28.66	25.17	28.66	13.71	14.49	0.00
LPII Global Equities Fund	40.89%	2,143.82	2143.82	3.01	0.00	0.00	0.00	0.00	0.00	0.00	0.38
Insight Synthetic Exposure		119.15	369.00								
Private Equity		504.77		5.33	7.88	30.07	26.54	30.07	17.38	12.54	13.48
Harbourvest	1.40%	73.46	73.46	9.73	9.73	21.21	20.65	21.21	18.44	14.23	15.55
LGIT	0.97%	50.73	50.73	-1.71	6.64	36.54	22.34	36.54	19.07	14.13	14.68
Pantheon	1.65%	86.61	86.61	6.25	6.38	25.70	25.66	25.70	17.04	14.19	15.77
BI New Energy Solutions	0.10%	5.05	5.05	0.00	-16.82	-13.75	-14.91	-13.75	-20.75	-11.92	-7.30
Robeco	0.19%	9.73	9.73	-8.20	-5.93	-11.67	-10.02	-11.67	-15.37	-16.64	-11.26
YFM Capital	0.01%	0.61	0.61	0.00	0.00	6.14	4.45	6.14	-6.26	-4.84	-9.39
Zouk Cleantech Europe	0.26%	13.52	13.52	0.00	4.59	26.28	16.56	26.28	10.45	-7.56	-6.46
Bridges	0.15%	7.71	7.71	0.00	-0.46	1.97	3.79	1.97	-1.68	0.00	-2.35
Adveq	1.35%	70.91	70.91	8.35	8.35	23.59	23.59	23.59	19.82	0.00	18.69
Montana	0.13%	6.60	6.60	2.00	2.00	16.14	15.75	16.14	0.00	0.00	48.28
Permira	0.80%	42.04	42.04	0.00	7.40	36.71	28.34	36.71	0.00	0.00	11.70
Hermes	1.18%	62.01	62.01	5.35	7.83	56.30	52.71	56.30	0.00	0.00	38.14
Ithaca	0.15%	8.04	8.04	4.14	4.14	24.94	17.41	24.94	0.00	0.00	15.10
Montana Capital Partners 1	0.21%	10.77	10.77	6.33	17.82	39.50	41.38	39.50	0.00	0.00	28.36
Adveq TMOO 1 L.P	0.57%	30.01	30.01	19.01	19.01	54.40	48.96	54.40	0.00	0.00	45.11
Coller International Part	0.11%	5.61	5.61	27.03	27.03	148.64	148.64	148.64	0.00	0.00	148.64
Naxicap Opportunities V	0.29%	15.02	15.02	0.00	21.72	0.00	24.97	0.00	0.00	0.00	24.97
Hermes Ped III	0.12%	6.32	6.32	-0.12	-0.12	0.00	0.00	0.00	0.00	0.00	-0.12
1 Month LIBOR				0.02	0.07	0.41	0.28	0.41	0.47	0.50	0.00
Fixed Income		265.48	265.48	0.26	1.97	4.48	5.32	4.48	3.08	4.23	4.37
Insight Bonds Plus	5.06%	265.48	265.48	0.26	1.97	4.47	5.31	4.47	2.70	3.27	4.77
		0.00	0.00								
Insight LDI MV Exposure	11.77%	617.28	617.28	-0.38	33.99	53.91	85.25	53.91	-15.63	-7.86	0.71
1 Month LIBOR + 3%				0.27	0.81	3.43	2.54	3.43	3.49	3.52	0.00
Diversified Growth		144.48	144.48	1.25	-0.71	2.31	3.25	2.31	2.94	4.75	4.99
Blackrock - DDG	2.76%	144.48	144.48	1.25	-0.71	2.31	3.25	2.31	2.94	4.75	4.45
Real Assets		30.52	30.52	0.58	3.17	49.42	40.53	49.42	6.98	-1.41	-1.50
Phaunos Timber Fund LTD	0.18%	9.50	9.50	1.87	3.99	43.15	39.60	43.15	3.73	-4.61	1.21
Brookfield	0.40%	21.02	21.02	0.00	2.80	52.45	40.98	52.45	9.35	2.39	2.28
Alternative Credit		169.69	169.69	0.07	9.87	15.24	15.07	15.24	9.83	7.49	8.46
M&G UK Companies Financing Fund	0.44%	23.26	23.26	1.19	1.19	4.45	3.34	4.45	6.27	5.27	4.40
M&G Debt Opportunities Fund	0.41%	21.68	21.68	0.00	20.37	28.19	29.82	28.19	15.57	0.00	15.16
Red Kite	0.22%	11.43	11.43	-1.51	6.80	31.24	20.13	31.24	0.00	0.00	21.27
Apollo	1.65%	86.41	86.41	0.00	8.44	11.51	11.51	11.51	0.00	0.00	7.38
M&G Debt Opportunities	0.51%	26.91	26.91	0.00	12.36	18.29	18.74	18.29	0.00	0.00	16.77
Hedge Funds		240.84	240.84	1.00	2.68	2.26	1.58	2.26	4.11	6.68	10.69
Blackrock Co-Investment IV	0.35%	18.42	18.42	0.00	1.71	9.81	7.45	9.81	0.00	0.00	11.49
Blackrock - ABS	0.00%	0.00	0.00	0.00	0.00	2.03	2.03	2.03	1.01	0.00	1.65
BlackRock - FIGA	4.24%	222.42	222.42	1.08	2.76	1.76	1.19	1.76	3.89	7.81	11.50
Winton Evolution	2.38%	124.70	124.70	1.55	-2.61	0.00	0.00	0.00	0.00	0.00	-0.24
GSA Trend Risk Premia	0.90%	47.02	47.02	-0.51	-5.41	0.00	0.00	0.00	0.00	0.00	-5.83
Graham T-Trend Capped Beta	0.87%	45.73	45.73	-1.25	-6.09	0.00	0.00	0.00	0.00	0.00	-8.69
Aeolus	0.98%	51.26	51.26	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.73
1 month GBP LIBOR +5%				0.44	1.30	5.44	4.04	5.44	5.50	5.53	5.57
Real Estate		262.80	262.80	-0.49	3.05	28.82	17.67	28.82	12.29	9.41	8.66
CBRE Multi Manager	3.66%	191.67	191.67	0.00	4.95	31.89	20.44	31.89	13.17	9.93	9.05
Pontoon Dock	0.01%	0.42	0.42	0.00	0.00	-0.23	-0.23	-0.23	0.00	0.00	-0.16
Knight Frank	1.35%	70.70	70.70	-1.80	-1.80	0.00	0.00	0.00	0.00	0.00	-1.80
20yr Gilt + 3%				0.38	1.16	4.69	3.42	4.69	5.35	5.61	0.00
Infrastructure		359.38	359.38	-0.90	1.21	5.17	3.11	5.17	10.00	7.28	6.03
3I Infrastructure PLC	0.33%	17.09	17.09	0.80	-1.67	13.75	13.29	13.75	16.98	14.47	13.20
Glenmont Clean Energy Fund	0.40%	20.87	20.87	-5.21	-6.40	8.96	11.62	8.96	12.63	9.77	6.23
Foresight	0.08%	4.15	4.15	0.00	-0.17	-27.39	-26.01	-27.39	-16.70	-10.62	-10.30
Impax New Energy Investor	0.08%	4.31	4.31	0.99	6.87	32.02	30.13	32.02	9.99	-2.02	0.22
Zouk Solar Opportunities	0.02%	1.03	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HSBC Environmental Infrastructure	0.05%	2.74	2.74	1.69	6.99	-9.52	19.92	-9.52	36.59	17.22	-0.48
Meridiam	0.94%	49.45	49.45	0.00	8.13	29.23	26.02	29.23	18.08	11.05	14.12
Semperian	1.82%	95.60	95.60	-1.93	2.37	6.18	0.59	6.18	6.52	10.50	7.57
Standard Chartered Asian Infrastructure	0.08%	4.09	4.09	0.00	-2.40	-27.90	-27.76	-27.90	-9.02	-6.18	-6.31
EMG	0.58%	30.53	30.53	-1.45	-1.44	-14.18	-14.18	-14.18	0.00	0.00	1.07
GMFF & LPFA Infrastructure	2.47%	129.52	129.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00								
Cash and Currency Hedge		226.73	226.73	0.00	-5.78	-19.68	-15.83	-19.68	-6.68	-3.98	-12.02
Cash Fund	2.23%	117.11	117.11	0.11	0.33	1.44	1.10	1.44	0.94	0.73	2.16
Cash Sweep	0.11%	5.96	5.96	0.02	0.06	0.33	0.24	0.33	0.35	0.36	0.40
Cash Sweep LIQ	0.05%	2.68	2.68	0.02	0.07	0.34	0.24	0.34	0.34	0.35	0.39
Insight Synthetic accumulated balance	2.27%	119.15	119.15	9.25	14.11	71.31	73.02	71.31	0.00	0.00	45.04
RCM Hedging Exposure	-0.35%	(18.17)	(18.17)	-0.52	-1.68	-8.71	-6.78	-8.71	-3.75	-1.45	-71.96
Pending Cash	0.04%	1.96	1.96								
UK RPI + 3%											
LPFA Total Plan excl LDI excl Cash		4,623.44	4623.44	2.02	2.24	15.24	12.86	15.24	8.89	9.71	8.91
LPFA Total Plan excl Cash		5,240.73	5240.73	1.70	7.58	15.94	17.66	15.94	7.13	8.33	8.04
LPFA Total Plan Composite		5,242.69	5242.69	1.72	4.61	12.48	14.26	12.48	6.32	8.10	5.73
Leverage			1.00								

Note: The LPFA Equity Composite return is not shown as it is currently under discussion with JPM as is GMFF & LPFA Infrastructure

Appendix 2 – Internal Performance Summary

Month	Opening Value	Net cash inflow/ (outflow)	Return from investments	Closing Value	Investment Return excl LDI	LDI Contribution to Return	Total Investment Return (inc LDI)	
	£m	£m	£m	£m	%	%	%	
Jan-16	4,598.86	(0.13)	(127.54)	4,471.19	-0.98%	-1.79%	-2.77%	
Feb-16	4,471.19	2.42	(82.72)	4,390.89	0.56%	-2.41%	-1.85%	
Mar-16	4,390.89	0.99	152.98	4,544.86	2.80%	0.68%	3.48%	
Apr-16	4,544.86	(6.01)	10.96	4,549.81	0.2249%	0.02%	0.24%	
May-16	4,549.81	(9.77)	16.55	4,556.59	1.2296%	-0.87%	0.36%	
Jun-16	4,556.59	(8.89)	61.34	4,609.04	2.32%	-0.97%	1.35%	
Jul-16	4,609.04	(6.16)	29.19	4,632.07	1.61%	-0.97%	0.63%	
Aug-16	4,632.07	0.58	105.95	4,738.61	0.53%	1.75%	2.29%	
Sep-16	4,738.61	(6.15)	179.70	4,912.15	1.32%	2.48%	3.79%	
Oct-16	4,912.15	(18.28)	201.13	5,095.00	0.07%	4.03%	4.10%	
Nov-16	5,095.00	22.69	(46.11)	5,071.58	-0.36%	-0.55%	-0.90%	
Dec-16	5,071.58	83.41	87.69	5,242.69	2.00%	-0.28%	1.71%	
Time Period					Annualised return excl LDI (%)		Annualised return (%)	Benchmark RPI+3%
Financial YTD	4,544.86	51.44	646.39	5,242.69	12.55%		19.52%	4.59%
Last 12 mths	4,609.66	43.20	589.83	5,242.69	11.85%		12.88%	5.56%
Last 3 years	4,852.26	(493.36)	883.80	5,242.69	6.02%		6.11%	4.82%

Note: Return from investments includes LDI movement

Details of the IRR since inception for the relevant holdings are detailed below.

		Investment	Adjusted Valuation	Inception
Growth	Global Property	CBRE Global Osiris Luxembourg Fund	191,672,373	0.88
Growth	Hedge Fund	Blackrock Co-Investment IV, L.P.	18,419,097	9.59
Growth	Infrastructure	GMPF & LPFA Infrastructure LLP	129,523,119	-3.39
CFM	Infrastructure	Semperian	95,600,639	6.57
CFM	Infrastructure	Meridiam Infrastructure SICAR	49,446,609	12.67
Growth	Infrastructure	The Energy & Minerals Group Fund III, L.P.	30,528,920	-3.13
Growth	Infrastructure	Glennmont Clean Energy Fund Europe 1 'A' L.P. (aka BNP Paribas Clean Energy Fund 'A' L.P.)	20,867,930	7.23
Growth	Infrastructure	3i Infrastructure, L.P.	16,614,000	24.42
Growth	Infrastructure	Foresight Environmental Fund L.P.	4,148,730	-17.01
Growth	Infrastructure	Standard Chartered IL&FS Asia Infrastructure Growth Fund, L.P.	4,092,472	-3.86
Growth	Infrastructure	InfraRed Environmental Infrastructure Fund LP II (fka HSBC Environmental Infrastructure Fund LP II)	2,740,239	7.77
Growth	Infrastructure	Impax New Energy Investor, L.P.	2,147,835	-15.12
Growth	Infrastructure	Impax New Energy Investors II, LP	2,161,598	9.43
Growth	Infrastructure	Pontoon Dock	424,105	-0.17
Growth	Private Equity	Apollo Union Street Partners	86,411,088	11.34
Growth	Private Equity	Hermes Private Equity Co-Investment Fund II, L.P.	62,007,764	40.22
Growth	Private Equity	Permira Europe V, L.P.	42,041,473	14.94
Growth	Private Equity	Adveq TMC I, L.P.	35,931,031	22.50
Growth	Private Equity	Adveq TMC II, L.P.	34,979,078	11.03
Growth	Private Equity	Pantheon USA Fund VIII Feeder	25,670,766	14.50
Growth	Private Equity	Adveq TMCO 1, L.P.	30,007,375	46.66
Growth	Private Equity	M&G Debt Opportunities Fund III	26,912,449	21.97
Growth	Private Equity	LGT Crown Asia-Pacific Private Equity plc	22,229,410	11.77
Growth	Private Equity	Brookfield Brazil Agriland LLC.	21,020,859	3.41
Growth	Private Equity	Pantheon Europe Fund VI, L.P.	15,810,451	10.42
Growth	Private Equity	HarbourVest Partners VIII - Cayman Buyout Fund L.P.	16,042,289	13.38
Growth	Private Equity	Pantheon USA Fund VI	13,972,534	10.56
Growth	Private Equity	LGT Crown European Private Equity PLC	11,026,538	10.11
Growth	Private Equity	Naxicap Opportunities V	15,022,695	21.99
Growth	Private Equity	Dover Street VII Cayman Fund, L.P.	10,137,742	12.74
Growth	Private Equity	Red Kite Mine Finance Fund I, L.P.	11,425,209	23.09
Growth	Private Equity	HarbourVest Partners Cayman Cleantech Fund I L.P.	11,770,639	5.27
Growth	Private Equity	Robeco Feeder Clean Tech Private Equity II	9,726,992	-12.00
Growth	Private Equity	Pantheon USA Fund VII	9,126,753	12.95
Growth	Private Equity	Phaunos Timber Fund Ltd.	9,392,635	-14.21
Growth	Private Equity	HarbourVest Partners VIII - Cayman Venture Fund L.P.	8,978,284	13.39
Growth	Private Equity	Cleantech Europe II (No 1)	8,789,571	4.93
Growth	Private Equity	HarbourVest Partners VII - Cayman Buyout Fund L.P.	8,127,089	11.72
Growth	Private Equity	LGT Crown European Buyout Opportunites II PLC	7,724,790	8.08
Growth	Private Equity	Ithaca, L.P.	8,044,834	15.50
Growth	Private Equity	PGSF IV Feeder LP	7,397,181	16.67
Growth	Private Equity	HarbourVest HIPEP V - Partnership Fund	6,626,169	8.69
Growth	Private Equity	Pantheon Asia Fund IV	6,671,790	13.87
Growth	Private Equity	Bridges Ventures III, L.P.	7,707,819	-3.31
Growth	Private Equity	Montana Capital Partners, L.P.	6,600,437	40.26
Growth	Private Equity	Montana Capital Partners OSP III	10,770,182	32.62
Growth	Private Equity	New Energy Solutions II K/S	5,053,207	-10.64
Growth	Private Equity	LGT Crown Global Secondaries II PLC	4,409,807	20.32
Growth	Private Equity	Pantheon Europe Fund IV	4,777,192	8.45
Growth	Private Equity	Hermes PEC III	6,316,803	-3.88
Growth	Private Equity	CleanTech Europe (No.1) LP	4,733,147	-5.55
Growth	Private Equity	Coller International Partners VII Feeder Fund, L.P. - Series B	5,613,513	71.20
Growth	Private Equity	HarbourVest Partners VII - Cayman Venture Fund L.P.	4,330,416	9.95
Growth	Private Equity	LGT Crown European Buyout Opportunities A PLC	3,457,610	10.55
Growth	Private Equity	Pantheon Global Secondaries III	3,185,268	5.58
Growth	Private Equity	HarbourVest Partners VIII - Cayman Mezzanine Fund L.P.	3,138,667	10.99
Growth	Private Equity	HarbourVest HIPEP IV - Supplemental European Companion Fund	1,904,348	13.27
Growth	Private Equity	HarbourVest Partners VII - Cayman Mezzanine Fund L.P.	2,405,548	9.15
Growth	Private Equity	LGT Crown European Buyout Opportunities D PLC	1,197,616	12.19
Growth	Private Equity	zouk Solar Opportunities Limited	1,033,810	9.43
Growth	Private Equity	LGT Crown Global Secondaries PLC	688,611	7.61
Growth	Private Equity	Capital Fund No. 1 LP	612,074	-7.16
			1,229,349,219	652.40

Significant valuation lags for some illiquid investments can lead to distortion of returns in the above table. Considering Internal Rate of Return (IRR) over the life of these long term assets can be a more informative performance indicator.