# **Oklahoma Police Pension & Retirement System**

Investment Performance Review

June 30, 2017

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**Market Overview** 

# **Global Long-Only Equity**

The second auarter of 2017 was truly a "Tale of Two Markets" as Growth indices outperformed their Value counterparts.

The Information Technology and Health Care sectors led the markets in the quarter, providing an outsized boost to Growth given the heavy presence of the two sectors within these indices. Meanwhile, Financials have lost steam following the robust run in 2016 which account for the largest sector representation on the Value side. As such, Value has strugaled to keep up with Growth this year.

International markets continue to outpace domestic stocks due to lower valuations relative to US markets as well as stronger earnings revisions on the belief of stronger global economic growth. Currency was also a tailwind for developed international holdings in the guarter, as the US dollar weakened against the euro and pound, in particular.

**US markets have posted positive gains this year**. Overall earnings expectations for the year point to an acceleration in growth which has helped support **rising valuations** this year. However, political uncertainty looms with concerns over the administration's ability to deliver on promised pro-growth agendas. With stock valuations at peak levels, expected political advancements such as tax reform, infrastructure spending, and regulatory easing will likely be necessary for maintaining strength and valuations in the domestic equity markets.

#### Q2 Performance for Indices – Growth vs. Value



## **Global Long/Short Equity**



Volatility continues to be at historical lows. As measured by VIX, volatility dropped to its lowest level since 1990, even hitting single digits during May and June. This is not expected to continue, and the anticipation of increased volatility has prompted managers to maintain their net exposure at slightly below historical averages. Gross exposure, however, has increased towards the high end of historical averages, based on continued optimism that fundamentals will matter and increased performance dispersion between sectors (the combination of an increase in volatility as well as dispersion in the market provides managers the opportunity to potentially make money on both longs and shorts).

Sources: ACG Research, Bloomberg

The eventual shrinking of the Fed's balance sheet decreases/eliminates the "rising tides" effect and increases the likelihood that fundamentals will drive stock pricing. Rising interest rates will be a mild tail wind for managers on the short side (something they have not had for the past few years).

Lower valuations in Europe at the end of 2016 prompted equity long/short managers to increase their European investments. Managers have now reached their highest level of European exposure since 2010. Eurozone consumer confidence remains high and we anticipate this to remain an area of opportunity for the foreseeable future.

The ongoing **delays** of the President's health care and tax reform initiatives has decreased the market's expectations for successful outcomes. M&A activity has continued, but the optimism about a looser regulatory environment has somewhat abated, slightly decreasing the opportunity set for event driven managers. 8

# **Global Private Equity**

Much like public markets, valuations remain high for new deals in private markets. The **median acquisition price for a private equity-backed company purchased in 1Q 2017 was 9.7x EBITDA**. Pricing is down from 10.3x EBITDA in 2015, however, it is on par with the transaction multiples of 2007, the end of the last buyout boom. Although purchase price multiples are at the same level as 2007, the composition of the price is much different today. The average buyout in 2007 used 11% more debt than a buyout completed in 1Q 2017. Factoring in the much lower debt servicing costs, the buyouts of 2017 should be in better position to weather a downturn than the buyouts of 2007. Still, higher purchase prices today are likely to translate into lower returns going forward.

After two lackluster years the IPO market has been relatively strong in the first half of 2017, with 77 companies making their public debuts, compared to 126 for the entirety of 2016. Just halfway through the year, the 2017 IPO market raised more capital than all of 2016 and appears poised to continue its healthy pace for the remainder of the year. IPO investors continue to favor technology and health care as these sectors made up half of the 52 IPO's completed in 2Q 2017. Private equity managers continue to take advantage of the accommodative IPO market. The 15 PE-backed companies to IPO in 2Q raised \$5.1 billion, a two-year high for deal count and a three-year high for proceeds. The combination of high valuations and a strong IPO market is likely to lead to strong distribution activity over the coming quarters as IPO lock-up periods expire and managers look to fully realize gains.

#### US LBO Purchase Price Multiples



Sources: ACG Research, S&P Capital IQ

#### **Global Real Assets**



**Real estate assets continue their impressive streak of gains** even as many investors question whether the momentum is sustainable in the face of a rising rate environment. After a post-election rise to 2.45% at year-end, 10-year Treasuries were yielding 2.32% at the end of 2Q 2017 even as the Fed raised rates twice during this period. The majority of investors view real estate as a longer-term asset class, making comparisons to 10-year rates more meaningful than comparisons to short-term rates. The more recent rise in risk-free rates has done little to affect US real estate cap rates and **the spread between 10-year US Treasury rates and cap rates actually increased marginally from year-end 2016.** Fundamental indicators remain strong as occupancy, lease rates and NOI continue to support real estate returns. The current spread of 403 bps is 260 bps higher than the pre-recession low suggesting that US real estate still has room to run.

A mixed outlook for the commodity sector led to mixed results across sub-sectors. **OPEC's** decision to maintain production cuts, as opposed to increasing cuts, was a major reason that oil sold off in 2Q, declining more than 9% to \$46 per barrel. Until the next unexpected event that causes some production to go offline, oil prices will be driven by the battle between OPEC's desire to raise prices and US shale producers ability to fill any production decreases agreed by the cartel. Prices any lower than \$40 per barrel could bring higher cost production offline and be supportive of prices going forward. Gold, although roughly flat during the quarter, could be a beneficiary if and when volatility returns to global markets.

Sources: ACG Research, Bloomberg, Real Capital Analytics

## **Global Traditional Fixed Income**

The **Federal Reserve** utilized its mid-June meeting to further its rate hiking campaign, which now includes four 25 basis points (bps) adjustments over the last 18-months. Investors were also provided guidance regarding the eventual unwinding of its enlarged \$4.5 trillion balance sheet, with limited roll-offs likely to begin before year-end. **The response over the past quarter has been a notable flattening of the US Treasury yield curve**, as two-year rates progressed modestly higher while longer-term rates actually declined with more muted growth/inflation assumptions. Unanticipated eagerness on the part of the FOMC, or other prominent central bankers, is a tail risk that could prompt an adjustment in asset prices.

The **BloomBar Aggregate** was solidly positive during the quarter. The decline in longer-term rates was a tailwind for all categories, but IG corporates dominated from an excess return standpoint as investor demand drove credit spreads to their tightest level since mid-2014.

**High Yield** continued its impressive performance trend. Spreads are now 230 bps tighter over the past year, but its worth noting that index-level yields don't typically spend much time below 6%. As such, careful security selection is becoming increasingly important.

**Municipal Bonds** were very solid, with tax-exempt issues benefitting from steady demand and low issuance fueled by a collapse in re-financing deals. The yield ratio versus US Treasury bonds has become fairly rich across the curve, especially for shorter-dated issues.

**Unhedged Global** government bonds outperformed domestic counterparts as the US dollar's decline aided returns. Outcomes in **Emerging Markets** remained particularly strong.



# **Global Nontraditional Fixed Income**



**Liquid Absolute Return** strategies generally fell short of traditional bond benchmarks in 2Q-17, but the median manager outperformed cash by about 80 bps and the diversification of risk factors remains valuable within portfolios. Trailing 12-month returns have been comfortably within the commonly referenced LIBOR +3% to +6% objective.

The lack of clarity in a broad range of global policy matters has sustained the feeling of uncertainty in the market. **Anticipated volatility in rates, spreads, and currency should provide opportunities for tactical managers with a wide range of implementation options.** Balancing idiosyncratic exposures against liquidity and risk constraints will be key.

As the credit cycle matures, **Alternative Fixed Income** investors are carefully weighing issuer fundamentals with market valuations. Opportunities in corporate and securitized assets have continued to drive returns among credit-oriented strategies. **Event-driven managers have oriented portfolios toward opportunities outside of distressed situations as supportive market conditions continue to sustain marginal businesses.** Eventually, we expect relative value trading and alpha-focused strategies to become more prominent in attribution.

**Private Credit** strategies offer the opportunity to earn both a credit spread and an illiquidity premium (typically 5-10 year terms) versus publicly traded fixed income strategies. **Fundraising and capital deployment in the sector remains strong** with direct lending strategies enjoying the majority of activity at this point in the cycle. Distressed opportunities appear in a small number of sectors or geographies as the overall default environment remains well below crisis levels.

# **Market Environment**





# **Equity Index Returns**





# **US Markets - Performance Breakdown**

For the Periods Ending June 30, 2017

#### 1.98 Consumer Discretionary (12.27)10.23 0.90 Consumer Staples (9.05) 6.59 -7.03 Energy (6.01) -13.81 3.80 Financials (14.55) 5.97 6.66 Health Care (14.51) 15.07 4.17 Industrials (10.28) 8.34 3.76 Information Technology (22.26)16.38 2.64 **Materials** (2.85) 8.09 1.85 Real Estate (2.93)4.62 -8.14 **Telecommunication Services** (2.14) -12.79 1.35 Utilities (3.16)6.86 3 Months YTD

S&P 500 - Sector Returns (%)

### Russell 2000 - Sector Returns (%)



Numbers in parenthesis represent sector weightings of the index. Sector weights may not add to 100% due to rounding or securities that are not assigned to a Global Industry Classification Standard (GICS) sector.

# Non-US Equity Index Returns





# Non-US Equity - Performance Breakdown

For the Periods Ending June 30, 2017



MSCI EAFE - Country Returns (%)

# MSCI EAFE - Sector Returns (%)



3 Months YTD

Numbers in parenthesis represent sector or country weights of the index. Sector or country weights may not add to 100% due to rounding.

Source: ACG Research, Bloomberg

# **Emerging Markets - Performance Breakdown**

For the Periods Ending June 30, 2017

#### MSCI Emerging Markets - Country Returns (%)



# MSCI Emerging Markets - Sector Returns (%)

Numbers in parenthesis represent sector or country weights of the index. Sector or country weights may not add to 100% due to rounding.

YTD

3 Months

Source: ACG Research, Bloomberg

Interest Rate Term Structure



Government Issues - 3 Months to 30 Years Maturity

Source: Bloomberg

# **Fixed Income Index Returns**





# **US Fixed Income Market Environment**

For the Periods Ending June 30, 2017

	Nominal Returns By Sector (%)												
	<u>3 Months</u>	YTD	<u>1 Year</u>	<u>3 Years</u>									
US Aggregate	1.44	2.28	-0.31	2.49									
US Treasury	1.18	1.86	-2.32	2.01									
US Agg: Gov't-Related	1.29	2.69	-0.19	2.23									
US Corporate IG	2.55	3.81	2.30	3.61									
MBS	0.87	1.35	-0.04	2.18									
CMBS	1.31	2.18	-0.34	2.57									
ABS	0.60	1.14	0.63	1.65									
US Corp High Yield	2.17	4.94	12.72	4.49									

Nominal Returns by Quality (%)												
	<u>3 Months</u>	YTD	<u>1 Year</u>	<u>3 Years</u>								
AAA	1.06	1.68	-1.25	2.09								
AA	1.65	2.62	-0.15	2.93								
A	2.43	3.47	1.11	3.63								
BAA	2.68	4.44	3.55	3.47								
BA	2.67	4.79	9.83	5.20								
В	1.72	4.29	12.45	3.61								
CAA	1.85	6.60	20.78	4.82								

Nominal Returns by Maturity (%)											
	<u>3 Months</u>	YTD	<u>1 Year</u>	<u>3 Years</u>							
1-3 Yr.	0.31	0.72	0.39	0.98							
3-5 Yr.	0.81	1.55	0.17	1.97							
5-7 Yr.	1.05	1.82	-0.37	2.15							
7-10 Yr.	1.38	2.19	-1.79	2.72							
10+ Yr.	4.32	5.82	-1.27	5.23							





#### Source: Bloomberg Excess returns are relative to the duration-neutral Treasury.

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# Monthly Index Returns

Index Name	3 Months (%)	YTD (%)	1 Year (%)	3 Years (%)	5 Years (%)	7 Years (%)	10 Years (%)
Equity							
S&P 500	3.09	9.34	17.90	9.61	14.63	15.41	7.18
Russell 1000	3.06	9.27	18.03	9.26	14.67	15.43	7.29
Russell 1000 Growth	4.67	13.99	20.42	11.11	15.30	16.48	8.91
Russell 1000 Value	1.34	4.66	15.53	7.36	13.94	14.31	5.57
Russell 2500	2.13	5.97	19.84	6.93	14.04	14.78	7.42
Russell 2000	2.46	4.99	24.60	7.36	13.70	14.35	6.92
Russell 2000 Growth	4.39	9.97	24.40	7.64	13.98	15.16	7.82
Russell 2000 Value	0.67	0.54	24.86	7.02	13.39	13.50	5.92
Wilshire 5000 Cap Wtd	2.95	8.73	18.54	9.34	14.61	15.33	7.29
MSCI ACWI	4.45	11.82	19.42	5.39	11.14	11.07	4.27
MSCI ACWI ex US	5.99	14.45	21.00	1.27	7.70	7.14	1.59
MSCI EAFE	6.37	14.23	20.83	1.61	9.18	8.40	1.50
MSCI EAFE Local Currency	2.95	7.94	22.68	7.52	13.05	9.86	2.50
MSCI EAFE Growth	7.72	17.03	16.13	3.20	9.58	8.98	2.43
MSCI EAFE Value	5.07	11.60	25.71	-0.05	8.70	7.75	0.50
MSCI Emerging Markets	6.38	18.60	24.17	1.44	4.33	4.22	2.25
Fixed Income							
BofA ML 1-3 Yr Treasury	0.17	0.44	-0.11	0.69	0.63	0.76	1.95
BloomBar 5 Yr Municipal	1.25	3.17	0.44	2.02	2.06	2.84	4.00
BloomBar US Aggregate	1.45	2.27	-0.31	2.48	2.21	3.19	4.48
BloomBar Gov't Bond	1.17	1.86	-2.18	1.99	1.30	2.41	3.93
BloomBar US Credit	2.35	3.68	1.84	3.40	3.68	4.85	5.61
BloomBar 10 Yr Municipal	2.35	4.18	-0.41	3.56	3.40	4.52	5.13
BloomBar US Corp High Yield	2.17	4.93	12.70	4.48	6.89	8.15	7.67
Citigroup World Govt Bond	2.89	4.49	-4.14	-1.00	-0.20	1.68	3.49
BloomBar Global Aggregate	2.60	4.41	-2.18	-0.35	0.78	2.39	3.69
BloomBar Multiverse	2.64	4.58	-1.38	-0.16	1.05	2.64	3.85
JPM EMBI Global Diversified	2.24	6.19	6.04	5.38	5.72	7.09	7.44
Real Assets							
NCREIF Property	1.75	3.33	6.98	10.17	10.49	11.58	6.42
NFI ODCE Net	1.49	3.05	6.91	10.33	10.76	12.03	4.29
FTSE NAREIT US Real Estate	1.52	2.70	-1.70	8.36	9.52	13.17	6.00
Bloomberg Commodity	-3.00	-5.26	-6.50	-14.81	-9.25	-5.68	-6.49
Cash and Equivalents							
US T-Bills 90 Day	0.20	0.31	0.49	0.23	0.17	0.15	0.58

# Monthly Index Returns

Index Name	1 Month (%)	YTD (%)	1 Year (%)	3 Years (%)	5 Years (%)	7 Years (%)	10 Years (%)
Equity							
S&P 500	2.06	11.59	16.04	10.87	14.78	14.63	7.74
Russell 1000	1.98	11.44	15.95	10.58	14.85	14.65	7.84
Russell 1000 Growth	2.66	17.02	18.05	12.66	15.60	15.78	9.36
Russell 1000 Value	1.33	6.05	13.76	8.45	14.00	13.46	6.21
Russell 2500	1.04	7.07	15.08	9.12	14.43	13.84	8.16
Russell 2000	0.74	5.77	18.45	9.89	14.19	13.39	7.76
Russell 2000 Growth	0.85	10.91	17.76	10.22	14.58	14.25	8.49
Russell 2000 Value	0.63	1.18	19.21	9.50	13.76	12.49	6.94
Wilshire 5000 Cap Wtd	1.88	10.77	16.21	10.71	14.80	14.53	7.86
MSCI ACWI	2.83	14.98	17.69	6.80	11.45	10.27	4.72
MSCI ACWI ex US	3.71	18.70	19.55	2.84	8.18	6.38	1.99
MSCI EAFE	2.89	17.53	18.32	3.26	9.55	7.44	1.94
MSCI EAFE Local Currency	0.68	8.67	17.90	7.83	12.87	9.25	2.91
MSCI EAFE Growth	2.43	19.87	13.40	4.83	9.73	8.11	2.76
MSCI EAFE Value	3.35	15.34	23.42	1.61	9.29	6.70	1.05
MSCI Emerging Markets	6.04	25.77	25.30	2.76	5.14	3.90	2.32
Fixed Income							
BofA ML 1-3 Yr Treasury	0.21	0.65	0.17	0.79	0.63	0.75	1.88
BloomBar Municipal	0.81	4.40	0.26	3.55	3.10	4.15	4.60
BloomBar US Aggregate	0.43	2.71	-0.51	2.71	2.02	3.10	4.44
BloomBar Gov't Bond	0.17	2.03	-2.40	2.10	1.14	2.33	3.80
BloomBar US Credit	0.73	4.44	1.26	3.67	3.27	4.68	5.65
BloomBar 10 Yr Municipal	0.93	5.15	0.45	3.78	3.28	4.41	5.14
BloomBar US Corp High Yield	1.11	6.09	10.95	5.34	6.72	7.78	8.17
Citigroup World Govt Bond	1.86	6.43	-2.87	-0.08	-0.02	1.43	3.37
BloomBar Global Aggregate	1.68	6.16	-1.28	0.51	0.88	2.15	3.66
BloomBar Multiverse	1.71	6.37	-0.53	0.72	1.16	2.39	3.84
Real Assets							
Bloomberg Commodity	2.26	-3.11	0.77	-12.69	-9.98	-6.26	-6.48
Cash and Equivalents							
US T-Bills 90 Day	0.09	0.39	0.54	0.26	0.19	0.16	0.55

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**Total Portfolio Summary** 

# Dollar Reconciliation (\$000s)

	3 Months	YTD	FYTD	5 Years
Beginning Market Value	2,346,027	2,264,618	2,195,220	1,751,829
Net Additions	-18,124	-21,082	-56,350	-216,912
Return on Investment	61,659	146,027	250,693	854,646
Ending Market Value	2,389,563	2,389,563	2,389,563	2,389,563





Actual Allocation Target Allocation

	Market Value (\$000s)	Actual Allocation (%)	Target Allocation (%)	Over/Under Target (%)	Range Min-Max (%)
Total Portfolio	2,389,563	100.00	100.00		
Equity	1,476,945	61.81	60.00	1.81	50.00 - 70.00
US Large Cap Equity	412,054	17.24	15.00	2.24	10.00 - 20.00
US Small/Mid Cap Equity	195,337	8.17	5.00	3.17	0.00 - 15.00
Long/Short Equity	335,626	14.05	15.00	-0.95	10.00 - 20.00
Int'l Developed Markets Equity	243,561	10.19	10.00	0.19	5.00 - 15.00
Emerging Markets Equity	112,645	4.71	5.00	-0.29	0.00 - 10.00
Private Equity	177,721	7.44	10.00	-2.56	5.00 - 15.00
Fixed Income	591,171	24.74	25.00	-0.26	15.00 - 35.00
Core Bonds	170,040	7.12	10.00	-2.88	7.50 - 20.00
Multi-Sector Fixed Income	215,452	9.02	7.50	1.52	5.00 - 10.00
Absolute Return	186,745	7.82	7.50	0.32	5.00 - 10.00
Private Credit	18,934	0.79	0.00	0.79	
Real Assets	291,846	12.21	15.00	-2.79	0.00 - 20.00
Core Real Estate	153,859	6.44	5.00	1.44	0.00 - 10.00
Opportunistic Real Estate	61,126	2.56	5.00	-2.44	0.00 - 10.00
Commodities	76,861	3.22	5.00	-1.78	0.00 - 10.00
Cash and Equivalents	29,601	1.24	0.00	1.24	

# **Oklahoma Police Pension & Retirement System**

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		FOR THE FERIOUS ENUING JU	JHE 30, 2017				
				Return (%)	Rank	Std Dev (%)	Sharpe Ratio
	5 Year Risk / Return	5 Year Relative Statistics		3 Months			
			Total Portfolio	2.64	82		
12	2.00	Total	Total Fund Policy	3.04			
11	1.00		IF TF Between 55 - 70% Equity	3.11			
<u>.</u> 10	00.0	Tona Foney					
20 (%) L	2 00	Beta 0.76					
, etur		Up Capture (%) 86.29		VTD			
£ 8	8.00	Down Capture (%) 64.16	Total Dartfalia	YID	00		
7	7.00		Total Fund Ballov	6.46 7.40	90		
6	6.00		I TE Between 55 - 70% Fewity	7.67			
	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00		IF IF Between 55 - 70% Equity	7.71			
	Standard Deviation (%)						
	Total Portfolio						
				FYID			
	IF TF Betw een 55 - 70%		Total Portfolio	11.56	77	3.00	3.71
	Equity		Total Fund Policy	11.95		3.54	3.26
	Culaudan		IF TF Between 55 - 70% Equity	12.86		3.63	3.38
	Calendar	rear Refurns					
	30.00						
	2 2 2 2	33 33 33					
	20.00	2.20 14.5 15.0 17		3 Years			
		<u>8 % 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 </u>	4   5   5   Total Portfolio	4.95	60	5.47	0.87
_	.03	5.2.55 5.105 5.105	Total Fund Policy	4.07		6.83	0.57
%)	0.00	2 OI	IF TF Between 55 - 70% Equity	5.21		6.80	0.74
tur	-10.00	6.0- 	2				
Re	-10.00						
	-20.00						
	3 <b>2</b>		Total Portfolio	S reals	65	5.20	1.61
	52 -73 00.02-		Total Fund Policy	0.JZ 8.04	00	5.20 6 50	1.01
	-40.00		IE TE Between 55 70% Equity	0.04 8 03		6.40	1.22
	2007 2008 2009 2010 2	011 2012 2013 2014 2015	2016	0.75		0.40	1.07

The rankings represent the portfolio's gross of fee returns versus a gross of fee peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

Statistics are calculated using monthly return data. © 2017 Asset Consulting Group All Rights Reserved

For the Periods Ending June 30, 2017



#### 10 Year Growth of a Dollar



	Total	Total
	Portfolio	Fund Policy
Number of Months	120	120
Highest Monthly Return (%)	5.31	7.47
Lowest Monthly Return (%)	-9.92	-12.85
Number of Positive Months	78	72
Number of Negative Months	42	48
% of Positive Months	65.00	60.00

10 Year Return Analysis



For the Periods Ending June 30, 2017

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.





The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

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# Rates of Return Summary & Universe Rankings

	Market Value (\$000s)	Actual Allocation (%)	3 Months (%)	Rank	YTD (%)	Rank	FYTD (%)	Rank	3 Years (%)	Rank	5 Years (%)	Rank	10 Yea (%)
Total Portfolio * (06/05) 1	2,389,563	100.00	2.54		6.27		11.14		4.52		8.08		4.70
Total Portfolio (08/85)			2.64	82	6.46	90	11.56	77	4.95	60	8.52	65	5.03
Total Fund Policy <sup>2</sup>			3.04		7.69		11.95		4.07		8.04		5.00
IF TF Between 55 - 70% Equity			3.11		7.91		12.86		5.21		8.93		5.39
Equity (01/98)	1,476,945	61.81	3.40		8.90		16.38		6.59		10.87		5.18
MSCI ACWI			4.45		11.82		19.42		5.39		11.14		4.27
US Large Cap Equity	412,054	17.24											
Northern Trust Russell 1000 Index (08/98) <sup>3</sup>	412,054	17.24	3.05	49	9.26	46	18.02	46	9.27	41	14.65	41	7.31
Russell 1000			3.06		9.27		18.03		9.26		14.67		7.29
eA US Large Cap Core Equity			3.01		9.06		17.35		8.91		14.32		7.49
US Small/Mid Cap Equity	195,337	8.17											
Boston Partners (01/98)	110,411	4.62	2.18	25 / 24	4.34	71 / 21	25.81	12 / 26	7.96	46 / 43	15.31	<b>52 / 4</b> 1	8.38
Russell 2500 Value			0.32		1.95		18.36		6.21		13.69		6.52
eA US Mid Cap Value Equity			1.46		5.44		17.75		7.79		15.54		7.90
eA US Small Cap Value Equity			0.93		1.99		23.19		7.65		14.82		7.91
Cortina (02/14)	84,927	3.55	5.59	39	10.83	57	32.67	11	7.77	58			
Russell 2000 Growth			4.39		9.97		24.40		7.64		13.98		7.82
eA US Small Cap Growth Equity			5.05		11.54		24.34		8.30		14.54		8.26
Long/Short Equity	335,626	14.05											
Grosvenor Long/Short Equity (11/03)	335,626	14.05	2.15		6.12		11.45		4.57		7.59		3.33
MSCI ACWI			4.45		11.82		19.42		5.39		11.14		4.27
HFRI FOF: Strategic			1.65		5.51		9.38		1.83		4.55		0.88

# Rates of Return Summary & Universe Rankings

	Market Value (\$000s)	Actual Allocation (%)	3 Months (%)	Rank	YTD (%)	Rank	FYTD (%)	Rank	3 Years (%)	Rank	5 Years (%)	Rank	10 Year (%)
International Developed Market	243,561	10.19											
Mondrian International (05/04)	131,552	5.51	4.26	87	12.07	73	16.37	94	0.63	80	8.58	81	1.72
MSCI EAFE			6.37		14.23		20.83		1.61		9.18		1.50
eA EAFE All Cap Value Equity			6.04		13.58		22.96		2.95		10.35		2.79
Baring Focused International (03/12)	112,010	4.69	7.51	29	16.71	19	21.54	42	5.42	14	8.16	95	
MSCI EAFE			6.37		14.23		20.83		1.61		9.18		1.50
eA EAFE All Cap Equity			6.71		14.77		20.47		3.30		10.14		2.40
Emerging Markets Equity	112,645	4.71											
Wasatch Emerging Markets (09/12)	33,773	1.41	9.12	10	20.37	36	13.72	95	1.93	59			
MSCI EM SC			2.69		16.10		17.34		1.10		5.46		2.46
eA Emerging Mkts Equity			6.27		19.24		23.75		2.47		5.77		3.25
AB EM Strategic Core Equity Fund (11/16)	78,872	3.30	5.70	62	19.68	45							
MSCI Emerging Markets			6.38		18.60		24.17		1.44		4.33		2.25
eA Emerging Mkts Equity			6.27		19.24		23.75		2.47		5.77		3.25
Private Equity (07/03)	177,721	7.44	1.23		2.77		5.47		8.74		10.00		8.46
Fixed Income (01/98)	591,171	24.74	1.72		3.40		3.82		1.45		3.90		4.72
BloomBar Universal			1.52		2.63		0.91		2.76		2.73		4.73
Core Bonds	170,040	7.12											
Agincourt Core Fixed Income (10/99)	170,040	7.12	1.65	33	2.54	48	0.44	44	2.86	47	2.80	46	4.88
BloomBar US Aggregate			1.45		2.27		-0.31		2.48		2.21		4.48
eA US Core Fixed Income			1.56		2.52		0.34		2.79		2.73		5.04
Multi Sector Fixed Income	215,452	9.02											
Oaktree Capital Management (02/98)	120,555	5.05	2.19		4.44		11.88		4.26		6.90		6.88
BloomBar US Aggregate	·		1.45		2.27		-0.31		2.48		2.21		4.48

# Rates of Return Summary & Universe Rankings

	Market Value (\$000 <u>s)</u>	Actual Allocation (%)	3 Months (%)	Rank	YTD (%)	Rank	FYTD (%)	Rank	3 Years (%)	Rank	5 Years (%)	Rank	10 Years (%)
Loomis Sayles (06/08)	94,897	3.97	3.31	34	6.05	35	-0.71	87	-0.14	64	1.15	75	
Citigroup World Govt Bond			2.89		4.49		-4.14		-1.00		-0.20		3.49
eA All Global Fixed Income			2.52		5.14		4.25		1.22		3.28		4.67
Absolute Return	186,745	7.82											
PAAMCO (10/02)	126,868	5.31	0.81		3.03		6.62		0.10		5.03		2.96
BloomBar US Aggregate			1.45		2.27		-0.31		2.48		2.21		4.48
HFRI FOF: Conservative			0.37		1.58		5.14		1.44		3.61		0.79
Wellington Global Total Return (12/16)	59,877	2.51	0.25	96	0.11	99							
LIBOR 3 Month			0.28		0.53		0.93		0.55		0.44		0.92
eA Global Unconstrained Fixed Income			1.87		4.41		5.82		2.54		3.60		4.74
Private Credit	18,934	0.79											
Real Assets (01/98)	291,846	12.21	1.02		1.86		5.52		4.45		7.35		3.94
Real Assets Blended Index ⁴			-0.01		0.26		2.35		-1.65		3.38		0.75
Core Real Estate	153,859	6.44											
JP Morgan Strategic Property (12/07)	115,904	4.85	1.57		3.52		7.94		10.78		12.15		
NFI ODCE Net			1.49		3.05		6.91		10.33		10.76		4.29
NCREIF Property			1.75		3.33		6.98		10.17		10.49		6.42
Blackstone Property Partners (01/15)	37,955	1.59	2.67		5.10		11.79						
NFI ODCE Net			1.49		3.05		6.91		10.33		10.76		4.29
NCREIF Property			1.75		3.33		6.98		10.17		10.49		6.42

# Rates of Return Summary & Universe Rankings

	Market Value (\$000s)	Actual Allocation (%)	3 Months (%)	Rank Y	'TD %)	Rank	FYTD (%)	Rank	3 Years (%)	Rank	5 Years (%)	Rank	10 Year (%)
Opportunistic Real Estate	61,126	2.56											
Private Real Estate (08/11)	56,368	2.36	3.34	6	.23		9.04		12.17		10.60		
Private Real Estate Direct													
Columbus Square (01/98)	4,758	0.20	4.83	7.	.03		9.12		10.67		9.48		11. <b>72</b>
NCREIF Property			1.75	3.	.33		6.98		10.17		10.49		6.42
NFI ODCE Net			1.49	3.	.05		6.91		10.33		10.76		4.29
Commodities	76,861	3.22											
Mount Lucas Peak Partners (01/98)	29,564	1.24	-1.10	-4	.88		0.81		7.08		7.21		4.34
CS Hedge - Global Macro			-1.77	-1.	.54		3.58		1.43		2.79		5.09
Gresham Tap Fund (08/14)	47,297	1.98	-3.17	-5	.18		-5.33						
Bloomberg Commodity			-3.00	-5.	.26		-6.50		-14.81		-9.25		-6.49
Cash and Equivalents	29,601	1.24											

For the Periods Ending June 30, 2017

#### Notes:

<sup>1</sup> Total Fund Policy Index history available in appendix.

<sup>2</sup> Total Fund Policy: Effective April 2016, the index consists of 60.0% MSCI ACWI, 25.0% BloomBar Universal, 10.0% NFI ODCE Net, 5.0% Bloomberg Commodity.

<sup>3</sup> Performance data prior to October 31, 2014 is reflective of the Mellon Capital Passive Index fund. Due to contributions and withdrawals in this account, the returns may differ from the performance of the fund.

<sup>4</sup> Real Assets Blended Index: Effective January 2016, the index consists of 67.0% NFI ODCE Net, 33.0% Bloomberg Commodity.

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Equity Manager Performance

# Northern Trust Russell 1000 Index

For the Periods Ending June 30, 2017



FYTD

386,004

-40,019

66,068

412,054

- Mirror the risk/return profile of the Russell 1000.
- Over rolling three year periods, rank above the median in the eA US Large Cap Core Equity universe.

Dollar Growth Summary (\$000s)

# Northern Trust Russell 1000



Northern Trust Russell 1000

Characteristic and allocation charts represents data of the EB Daily Valued Large Cap Stock Index Fund (Non-Mutual Commingled). Sector weights may not add to 100% due to securities that are not assigned to a Global Industry Classification Standard (GICS) sector.

3 Months

0

399,847

12,207

412,054

**Beginning Market Value** 

Net Additions

**Ending Market Value** 

Return on Investment
# Northern Trust Russell 1000 Index

For the Periods Ending June 30, 2017



### 10 Year Growth of a Dollar



Northern	
Trust	Russell 1000
120	120
11.20	11.21
-17.49	-17.46
78	78
42	42
65.00	65.00
	Northern Trust 120 11.20 -17.49 78 42 65.00

**10 Year Return Analysis** 

Statistics are calculated using monthly return data. © 2017 Asset Consulting Group All Rights Reserved

# Northern Trust Russell 1000 Index

For the Periods Ending June 30, 2017



# Northern Trust Russell 1000 Index

For the One Year Periods Ending June



For the Periods Ending June 30, 2017



Russell 2500 Value Russell 2000 Value Boston Partners

- Outperform the Russell 2500 Value and Russell 2000 Value.
- Over rolling three year periods, rank above the median in the eA US Mid Cap Value Equity universe.



### Dollar Growth Summary (\$000s)

	3 Months	FYTD
Beginning Market Value	108,226	88,277
Net Additions	-167	-604
Return on Investment	2,351	22,737
Income	634	1,982
Gain/Loss	1,717	20,755
Ending Market Value	110,411	110,411

Sector weights may not add to 100% due to securities that are not assigned to a Global Industry Classification Standard (GICS) sector.

For the Periods Ending June 30, 2017

### 10 Year Risk / Return 12.00 11.00 10.00 9.00 Return (%) 8.00 7.00 ц., 6.00 5.00 4.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00 Standard Deviation (%) Boston Partners Russell 2500 Value

	Boston Partners	Russell 2500 Value
Return (%)	8.38	6.52
Standard Deviation (%)	19.63	18.88
Sharpe Ratio	0.40	0.32

10 Year Portfolio Statistics

10 Year Return Analysis

Benchmark Relative Statistics	
Beta	1.02
R Squared (%)	96.04
Alpha (%)	1.74
Tracking Error (%)	3.92
Batting Average (%)	53.33
Up Capture (%)	103.55
Down Capture (%)	96.82

### 10 Year Growth of a Dollar



	Boston	Russell
	Partners	2500 Value
Number of Months	120	120
Highest Monthly Return (%)	19.35	15.95
Lowest Monthly Return (%)	-22.79	-20.65
Number of Positive Months	74	74
Number of Negative Months	46	46
% of Positive Months	61.67	61.67







For the One Year Periods Ending June

For the Periods Ending June 30, 2017



### Cortina

- Outperform the Russell 2000 Growth.
- Over rolling three year periods, rank above median in the eA US Small Cap Growth Equity universe.



### Dollar Growth Summary (\$000s)

	3 Months	FYTD
Beginning Market Value	80,616	64,590
Net Additions	-188	-672
Return on Investment	4,499	21,009
Income	16	93
Gain/Loss	4,483	20,916
Ending Market Value	84,927	84,927



**Sector Allocation** 

### Sector weights may not add to 100% due to securities that are not assigned to a Global Industry Classification Standard (GICS) sector.

For the Periods Ending June 30, 2017

Down Capture (%)

### 3 Year Risk / Return **3 Year Portfolio Statistics** Russell 10.00 Cortina 2000 Growth 9.00 7.77 7.64 Return (%) 8.00 16.07 Standard Deviation (%) 15.62 Return (%) - 22 Sharpe Ratio 0.49 0.46 7.00 6.00 **Benchmark Relative Statistics** 5.00 Beta 0.91 4.00 87.37 R Squared (%) 17.00 20.00 12.00 13.00 14.00 15.00 16.00 18.00 19.00 Alpha (%) 0.83 Standard Deviation (%) Tracking Error (%) 5.74 Russell 2000 Grow th Cortina Batting Average (%) 61.11 Up Capture (%) 92.46

### 3 Year Growth of a Dollar



	Cortina	Russell 2000 Growth
Number of Months	36	36
Highest Monthly Return (%)	11.26	8.95
Lowest Monthly Return (%)	-9.33	-10.83
Number of Positive Months	23	24
Number of Negative Months	13	12
% of Positive Months	63.89	66.67

**3 Year Return Analysis** 

92.81





For the One Year Periods Ending June





For the Periods Ending June 30, 2017

### Historical Net & Gross Exposure



### Performance Goals

- Meet or exceed the return of the MSCI All Country World, over extended time periods (5 to 10 years).
- The volatility (standard deviation) of the portfolio should be less than two-thirds the volatility of the MSCI All Country World.
- The Beta of the portfolio relative to the MSCI All Country World Index should be < 0.7.

Characteristics provided by manager are the weighted average of GLSEF and GLSEF-B data.

For the Periods Ending June 30, 2017



### 10 Year Growth of a Dollar



			HFRI FOF:
	Grosvenor	MSCI ACWI	Strategic
Number of Months	120	120	120
Highest Monthly Return (%)	4.12	11.90	4.25
Lowest Monthly Return (%)	-10.06	-19.79	-7.66
Number of Positive Months	77	69	70
Number of Negative Months	43	51	50
% of Positive Months	64.17	57.50	58.33

**10 Year Return Analysis** 

HFRI FOF:

Strategic

0.88

6.69

0.07

1.01

83.06

2.47

3.04

64.17

119.80

91.41

For the Periods Ending June 30, 2017



For the One Year Periods Ending June



For the Periods Ending June 30, 2017



### Performance Goals

- Outperform the MSCI EAFE and MSCI EAFE Value.
- Over rolling three year periods, rank above the median in the eA EAFE All Cap Value Equity universe.

### **Sector Allocation**



### Dollar Growth Summary (\$000s)

Beginning Market Value	3 Months 126,182	FYTD 113,048
Net Additions	0	0
Return on Investment	5,369	18,503
Ending Market Value	131,552	131,552

### **Country Allocation**



For the Periods Ending June 30, 2017



			MSCI
	Mondrian	MSCI EAFE	EAFE Value
Return (%)	1.72	1.50	0.50
Standard Deviation (%)	16.69	18.65	19.82
Sharpe Ratio	0.08	0.06	0.00

10 Year Portfolio Statistics

0.97	0.90
0.07	0.02
73:38	74.20
0.27	1.09
4.30	5.39
50.00	53.33
89.11	81.27
91.87	83.87
	0.87 95.36 0.27 4.30 50.00 89.11 91.87

10 Year Return Analysis



10 Year Growth of a Dollar

			MSCI
	Mondrian	MSCI EAFE	EAFE Value
Number of Months	120	120	120
Highest Monthly Return (%)	11.12	12.96	17.46
Lowest Monthly Return (%)	-15.52	-20.17	-20.56
Number of Positive Months	62	61	61
Number of Negative Months	58	59	59
% of Positive Months	51.67	50.83	50.83

### 10 Year Risk / Return

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For the Periods Ending June 30, 2017



### Performance Goals

- Outperform the MSCI EAFE and MSCI ACWI ex US.
- Over rolling three year periods, rank above the median in the eA EAFE All Cap Equity universe.

### **Sector Allocation**



### Dollar Growth Summary (\$000s)

Beginning Market Value	3 Months 104,276	FYTD 93,032
Net Additions	-100	-951
Return on Investment	7,834	19,929
Ending Market Value	112,010	112,010

**Country Allocation** 



Characteristic and allocation charts represents data of the Baring Focused International Equity Fund (Non-Mutual Commingled).

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For the Periods Ending June 30, 2017



### 5 Year Growth of a Dollar



	Baring	MSCI EAFE	MSCI ACWI ex US
Number of Months	60	60	60
Highest Monthly Return (%)	8.27	7.82	8.21
Lowest Monthly Return (%)	-7.13	-7.35	-7.63
Number of Positive Months	35	35	36
Number of Negative Months	25	25	24
% of Positive Months	58.33	58.33	60.00

**5 Year Return Analysis** 

MSCI

ACWI ex US

7.70

11.57

0.65

0.87

82.68

1.45

4.84

48.33

87.88

82.24

For the Periods Ending June 30, 2017



For the One Year Periods Ending June



For the Periods Ending June 30, 2017



■ Wasatch ■ MSCI EM SC

### Performance Goals

- Outperform the MSCI EM SC over a market cycle.
- Rank above median in the eA Emerging Mkts Equity universe over a market cycle.

### **Sector Allocation**



### Dollar Growth Summary (\$000s)

	3 Months	FYTD
Beginning Market Value	31,068	30,116
Net Additions	-125	-433
Return on Investment	2,829	4,090
Ending Market Value	33,773	33,773

**Country Allocation** 



■ Wasatch ■ MSCI EM SC

Characteristic and allocation charts represents data of the Wasatch Emerging Markets Small Cap CIT (Non-Mutual Commingled).

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For the Periods Ending June 30, 2017



### 4 Year Growth of a Dollar



	Wasatch	MSCI EM SC
Number of Months	48	48
Highest Monthly Return (%)	8.10	10.01
Lowest Monthly Return (%)	-9.57	-9.60
Number of Positive Months	27	29
Number of Negative Months	21	19
% of Positive Months	56.25	60.42

**4 Year Return Analysis** 

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4.30

13.70

0.30

0.83

76.59

-1.07

6.71

41.67 87.36

98.28

For the Periods Ending June 30, 2017



For the One Year Periods Ending June



# AB EM Strategic Core Equity Fund

For the Periods Ending June 30, 2017



■ AB EM Strategic Core Equity Fund ■ MSCI Emerging Markets

### Performance Goals

- Outperform the MSCI Emerging Markets.
- Over rolling three year periods, rank above the median in the eA Emerging Mkts Equity universe.

### **Sector Allocation**



■ AB EM Strategic Core Equity Fund ■ MSCI Emerging Markets

### Dollar Growth Summary (\$000s)

Beginning Market Value	3 Months 74,618	FYTD 0
Net Additions	0	69,666
Return on Investment	4,254	9,206
Ending Market Value	78,872	78,872

### **Country Allocation**



■ AB EM Strategic Core Equity Fund ■ MSCI Emerging Markets

# AB EM Strategic Core Equity Fund

For the Periods Ending June 30, 2017



# **Private Equity**

# For the Period Ending June 30, 2017

### Summary of Cash Flows for 6 Months

Cash Outflows	Cash Inflows	Net Cash Flows
-14,408,724	22,459,813	8,051,089

### Summary of Portfolio Inception to Date

	Inception Date	Committed	Drawn to Date	Remaining Commitment	Distributions to Date	Adjusted Ending Value	Total Value	Total Value to Paid-in
Total		613,000,000	499,469,334	135,441,679	555,381,200	177,721,353	733,102,553	1.47x
Buyout		205,500,000	174,931,453	44,655,734	217,056,849	50,620,280	267,677,129	1.53x
Marathon IV	Apr-99	7,000,000	7,462,426	-	10,188,872	-	10,188,872	1.37x
Hicks, Muse	Oct-01	15,000,000	16,211,210	-	28,272,306	-	28,272,306	1.74x
Calera Capital (Fremont III)	Jan-02	10,000,000	10,998,419	271,104	10,210,986	39,740	10,250,726	0.93x
Arsenal Capital Partners	Jan-03	15,000,000	16,154,576	-	28,622,510	-	28,622,510	1.77x
Levine Leichtman	Jan-03	10,000,000	10,612,096	439,719	15,175,710	1,387,508	16,563,218	1.56x
Marathon Fund Limited Partnership V	Dec-04	10,000,000	10,557,584	9,301	19,621,324	-10,517	19,610,807	1.86x
Arsenal Capital Partners II	Sep-06	15,000,000	14,898,996	-24,371	24,805,969	6,254,708	31,060,677	2.08x
Thompson Street C.P. II	Dec-06	10,000,000	10,579,171	970,164	18,484,018	2,414,614	20,898,632	1.98x
Sun Capital Partners V	Apr-07	12,500,000	12,588,330	2,182,365	8,296,866	8,569,706	16,866,572	1.34x
HM Capital Sector Performance Fund	May-07	15,000,000	15,604,226	647,720	14,690,140	-	14,690,140	0.94x
Calera Capital Fund IV	Jan-08	10,000,000	8,750,484	1,249,516	12,521,567	1,355,307	13,876,874	1.59x
Levine Leichtman IV	Aug-08	10,000,000	8,627,273	1,679,127	13,417,144	2,694,113	16,111,257	1.87x
Thompson Street Capital III	Aug-11	7,500,000	7,363,701	136,299	7,060,973	4,064,565	11,125,538	1.51x
Arsenal Capital Partners III	Apr-12	7,500,000	7,914,948	1,809,271	4,481,287	7,791,781	12,273,068	1.55x
Apollo Investment Fund VIII	Oct-13	7,500,000	5,367,722	3,003,886	1,185,253	5,025,616	6,210,869	1.16x
Francisco Partners Fund IV	Nov-14	8,000,000	4,900,000	3,100,000	-	5,511,868	5,511,868	1.12x
CenterOak Equity Fund I	Aug-15	7,500,000	2,315,408	5,184,592	-	1,520,347	1,520,347	0.66x
Thompson Street Capital Partners IV	Jan-16	7,500,000	3,235,558	4,264,442	-	3,233,523	3,233,523	1.00x
Leonard Green Equity Investors VII	Feb-16	7,500,000	789,325	6,732,599	21,924	767,401	789,325	1.00x
Apollo Investment Fund IX	May-17	13,000,000	-	13,000,000	-	-	-	-

# **Private Equity**

For the Period Ending June 30, 2017

### Summary of Portfolio Inception to Date

	Inception		Drawn	Remaining	Distributions	Adjusted		Total Value	
	Date	Committed	to Date	Commitment	to Date	Ending Value	Total Value	to Paid-in	
Distressed		143,500,000	115,894,534	28,064,456	153,025,563	19,165,906	172,191,469	1.49x	
Oaktree Opportunities Fund II	Feb-98	3,000,000	3,000,000	-	4,525,923	-	4,525,923	1.51x	
Oaktree Opportunities Fund III	Sep-99	5,000,000	5,000,000	-	7,534,416	-1,369	7,533,047	1.51x	
Oaktree Opportunities Fund IV	Dec-01	10,000,000	10,000,000	-	16,802,931	1,897	16,804,828	1.68x	
Siguler Guff Dist Opp I	Jan-03	20,000,000	19,568,416	-	30,991,330	-	30,991,330	1.58x	
Oaktree Opportunities Fund V	Jun-04	4,000,000	4,000,000	-	6,458,089	93,427	6,551,516	1.64x	
Oaktree Opportunities Fund VI	Aug-05	4,000,000	4,000,000	-	6,317,103	3,808	6,320,911	1.58x	
Siguler Guff Dist Opp II	Sep-05	20,000,000	20,006,044	-	27,504,768	837,942	28,342,710	1.42x	
Oaktree Opportunities VII A	Mar-07	7,500,000	7,554,219	-	9,687,042	694,593	10,381,635	1.37x	
Oaktree Opportunities VII B	May-08	7,500,000	6,750,000	750,000	11,101,022	542,208	11,643,230	1.72x	
Siguler Guff Dist Opp III	Aug-08	15,000,000	14,480,311	600,000	18,881,598	3,788,016	22,669,614	1.57x	
Oaktree Opportunities VIII	Nov-09	7,500,000	6,750,000	750,000	7,879,319	1,834,410	9,713,729	1.44x	
Oaktree Opportunities IX	Jun-12	7,500,000	7,500,000	-	1,046,121	6,659,753	7,705,874	1.03x	
Oaktree European Dislocation Fund	Oct-13	7,500,000	4,285,544	3,214,456	3,545,901	1,130,231	4,676,132	1.09x	
Oaktree Opportunities Fund X	Mar-15	7,500,000	3,000,000	5,250,000	750,000	3,580,990	4,330,990	1.44x	
Oaktree Opportunities Fund Xb	Jun-15	7,500,000	-	7,500,000	-	-	-	-	
Apollo EPF III	Dec-16	10,000,000	-	10,000,000	-	-	-	-	
Emerging Markets Focused		7,500,000	5,895,216	2,121,067	980,182	5,063,833	6,044,015	1.03x	
Actis EM IV	Jan-12	7,500,000	5,895,216	2,121,067	980,182	5,063,833	6,044,015	1.03x	
Mezzanine		49,500,000	49,629,213	5,519,655	65,682,458	5,228,122	70,910,580	1.43x	
TCW Crescent II	Mar-99	7,000,000	6,726,192	-	9,793,612	-	9,793,612	1.46x	
TCW Crescent Mezzanine Partner III	Jul-01	10,000,000	10,188,852	200,324	20,545,737	325,013	20,870,750	2.05x	
TCW Crescent IV	Jun-06	10,000,000	9,873,180	1,921,076	11,036,326	105,822	11,142,148	1.13x	
Newstone Capital Partners	Oct-06	5,000,000	5,697,863	116,709	6,584,299	436,536	7,020,835	1.23x	
TCW Mezzanine Fund V	Jan-08	10,000,000	7,336,349	2,663,651	9,228,323	1,223,811	10,452,134	1.42x	
Newstone Capital Partners II	Jan-10	7,500,000	9,806,777	617,895	8,494,161	3,136,940	11,631,101	1.19x	
Other		31,500,000	15,310,440	17,429,619	5,371,602	12,497,158	17,868,760	1.17x	
EnCap Energy Fund IX	Jan-13	6,500,000	6,355,402	818,509	3,332,950	4,861,453	8,194,403	1.29x	
EnCap Energy Fund X	Mar-15	7,500,000	4,018,943	4,047,205	1,125,082	3,319,444	4,444,526	1.11x	
ArcLight Energy Partners VI	Mar-15	7,500,000	4,936,095	2,563,905	913,570	4,316,261	5,229,831	1.06x	
EnCap Energy Fund XI	Dec-16	10,000,000	-	10,000,000	-	-		-	
Secondary Fund of Funds		20,000,000	21,439,062	326,939	24,582,447	4,155,624	28,738,071	1.34x	
Lexington VI	Dec-05	20,000,000	21,439,062	326,939	24,582,447	4,155,624	28,738,071	1.34x	

# **Private Equity**

For the Period Ending June 30, 2017

### Summary of Portfolio Inception to Date

Inception		Drawn	Remaining	Distributions	Adjusted		Total Value	
Date	Committed	to Date	Commitment	to Date	Ending Value	Total Value	to Paid-in	
	155,500,000	116,369,416	37,324,209	88,682,099	80,990,430	169,672,529	1.46x	
Jul-99	7,000,000	6,932,406	67,594	4,507,097	-	4,507,097	0.65x	
Feb-00	1,000,000	955,000	-	322,553	-	322,553	0.34x	
Oct-00	12,000,000	11,010,270	989,730	10,111,364	503,783	10,615,147	0.96x	
Oct-00	15,000,000	14,738,625	-	12,141,249	-	12,141,249	0.82x	
May-01	6,000,000	4,500,000	-	5,496,840	105,930	5,602,770	1.25x	
Jun-01	10,000,000	10,000,000	-	10,893,985	2,453,096	13,347,081	1.33x	
Dec-04	12,000,000	11,232,000	768,000	7,532,368	7,705,534	15,237,902	1.36x	
Nov-05	5,000,000	4,950,000	50,000	12,823,983	20,577,942	33,401,925	6.75x	
Mar-07	7,500,000	6,862,500	637,500	6,429,343	6,540,043	12,969,386	1.89x	
Sep-07	15,000,000	15,000,000	-	14,334,293	7,727,191	22,061,484	1.47x	
Mar-11	7,500,000	6,900,000	600,000	1,475,348	9,863,103	11,338,451	1.64x	
Jul-11	5,000,000	4,822,365	177,635	400,700	6,585,896	6,986,596	1.45x	
Oct-12	7,500,000	7,061,250	438,750	1,744,478	7,654,763	9,399,241	1.33x	
Oct-13	5,000,000	3,800,000	1,200,000	-	4,144,330	4,144,330	1.09x	
May-14	5,000,000	3,225,000	1,775,000	441,498	3,032,872	3,474,370	1.08x	
Dec-15	10,000,000	3,180,000	6,820,000	27,000	3,048,685	3,075,685	0.97x	
May-16	7,500,000	300,000	7,200,000	-	300,000	300,000	1.00x	
May-16	7,500,000	-	7,500,000	-	-	-	-	
Dec-16	10,000,000	900,000	9,100,000	-	747,262	747,262	0.83x	
	Inception           Date           Jul-99           Feb-00           Oct-00           Oct-00           Jun-01           Dec-04           Nov-05           Mar-07           Sep-07           Mar-11           Jul-11           Oct-12           Oct-13           May-14           Dec-15           May-16           Dec-16	Inception           Date         Committed           155,500,000         155,500,000           Jul-99         7,000,000           Feb-00         1,000,000           Oct-00         12,000,000           Oct-00         15,000,000           Oct-00         15,000,000           May-01         6,000,000           Jun-01         10,000,000           Dec-04         12,000,000           Nov-05         5,000,000           Mar-07         7,500,000           Mar-11         7,500,000           Jul-11         5,000,000           Oct-12         7,500,000           May-14         5,000,000           May-14         5,000,000           May-16         7,500,000	Inception         Drawn           Date         Committed         to Date           155,500,000         116,369,416           Jul-99         7,000,000         6,932,406           Feb-00         1,000,000         955,000           Oct-00         12,000,000         11,010,270           Oct-00         15,000,000         14,738,625           May-01         6,000,000         4,500,000           Jun-01         10,000,000         10,000,000           Dec-04         12,000,000         11,232,000           Nov-05         5,000,000         4,950,000           Mar-07         7,500,000         6,862,500           Sep-07         15,000,000         15,000,000           Jul-11         5,000,000         4,822,365           Oct-12         7,500,000         3,800,000           May-14         5,000,000         3,225,000           Dec-15         10,000,000         3,180,000           May-16         7,500,000         -           Dec-16         10,000,000         900,000	Inception         Drawn         Remaining Commitment           Date         Committed         to Date         Commitment           Jul-99         7,000,000         6,932,406         67,594           Feb-00         1,000,000         955,000         -           Oct-00         12,000,000         11,010,270         989,730           Oct-00         15,000,000         14,738,625         -           May-01         6,000,000         4,500,000         -           Jun-01         10,000,000         10,000,000         -           Dec-04         12,000,000         11,232,000         768,000           Nov-05         5,000,000         4,950,000         50,000           Mar-07         7,500,000         6,862,500         637,500           Mar-11         7,500,000         4,822,365         177,635           Oct-12         7,500,000         4,822,365         177,635           Oct-13         5,000,000         3,800,000         1,200,000           May-14         5,000,000         3,225,000         1,75,000           Dec-15         10,000,000         300,000         7,200,000           May-16         7,500,000         -         7,500,000 <td>InceptionDrawnRemainingDistributionsDateCommittedto DateCommitmentto Date155,500,000116,369,41637,324,20988,682,099Jul-997,000,0006,932,40667,5944,507,097Feb-001,000,000955,000-322,553Oct-0012,000,00011,010,270989,73010,111,364Oct-0015,000,00014,738,625-12,141,249May-016,000,0004,500,000-5,496,840Jun-0110,000,00011,232,000768,0007,532,368Nov-055,000,0004,950,00050,00012,823,983Mar-077,500,0006,862,500637,5006,429,343Sep-0715,000,00015,000,000-14,334,293Mar-117,500,0003,800,0001,200,000-Oct-127,500,0003,800,0001,200,000-May-145,000,0003,180,0006,820,00027,000May-147,500,0003,00,0007,200,000-May-167,500,0003,00,0007,200,000-May-167,500,0003,00,0007,200,000-May-167,500,0003,00,0007,200,000-May-167,500,000-7,500,000-May-167,500,000-7,500,000-May-167,500,000-7,500,000-May-167,500,000-7,500,000-May-16</td> <td>Inception         Drawn         Remaining         Distributions         Adjusted           Date         Committed         to Date         Commitment         to Date         Ending Value           155,500,000         116,369,416         37,324,209         88,682,099         80,990,430           Jul-99         7,000,000         6,932,406         67,594         4,507,097         -           Feb-00         1,000,000         955,000         -         322,553         -           Oct-00         12,000,000         11,010,270         989,730         10,111,364         503,783           Oct-00         15,000,000         14,738,625         -         12,141,249         -           May-01         6,000,000         4,500,000         -         10,893,985         2,453,096           Dec-04         12,000,000         11,232,000         768,000         7,532,368         7,705,534           Nov-05         5,000,000         4,950,000         50,000         12,823,983         20,577,942           Mar-07         7,500,000         6,862,500         637,500         6,429,343         6,540,043           Sep-07         15,000,000         15,000,000         14,334,293         7,727,191         Mar-11         7,500</td> <td>Inception         Drawn         Remaining to Date         Distributions         Adjusted           Date         Committed         to Date         Commitment         to Date         Ending Value         Total Value           155,500,000         116,369,416         37,324,209         88,682,099         80,990,430         169,672,529           Jul-99         7,000,000         6,932,406         67,594         4,507,097         -         4,507,097           Feb-00         1,000,000         955,000         -         322,553         -         322,553           Oct-00         12,000,000         11,010,270         989,730         10,111,364         503,783         10,615,147           Oct-00         15,000,000         14,738,625         -         12,141,249         -         12,141,249           May-01         6,000,000         4,500,000         -         5,496,840         105,930         5,602,770           Jun-01         10,000,000         11,232,000         768,000         7,532,368         7,705,534         15,237,902           Nov-05         5,000,000         4,950,000         50,000         12,823,983         20,577,942         33,401,925           Mar-07         7,500,000         15,000,000         6,700,0</td> <td>Inception         Drawn         Remaining         Distributions         Adjusted         Total Value         to Date           Date         Committed         to Date         Commitment         to Date         Ending Value         Total Value         to Paid-in           Jul-99         7,000,000         6,932,406         37,324,209         88,682,099         80,970,430         169,672,529         1.46x           Jul-99         7,000,000         6,932,406         6,7594         4,507,097         4,507,097         0.65x           Feb-00         1,000,000         955,000         -         322,553         .         322,553         0.34x           Oct-00         15,000,000         11,010,270         989,730         10,111,364         503,783         10,615,147         0.96x           May-01         6,000,000         14,738,625         -         12,141,249         .         12,141,249         0.82x           Jun-01         10,000,000         10,000,000         -         10,873,985         2,453,096         13,347,081         1.33x           Dec-04         12,000,000         11,232,000         768,000         7,503,686         10,5930         5,602,770         1.36x           Nov-05         5,000,000         4,</td>	InceptionDrawnRemainingDistributionsDateCommittedto DateCommitmentto Date155,500,000116,369,41637,324,20988,682,099Jul-997,000,0006,932,40667,5944,507,097Feb-001,000,000955,000-322,553Oct-0012,000,00011,010,270989,73010,111,364Oct-0015,000,00014,738,625-12,141,249May-016,000,0004,500,000-5,496,840Jun-0110,000,00011,232,000768,0007,532,368Nov-055,000,0004,950,00050,00012,823,983Mar-077,500,0006,862,500637,5006,429,343Sep-0715,000,00015,000,000-14,334,293Mar-117,500,0003,800,0001,200,000-Oct-127,500,0003,800,0001,200,000-May-145,000,0003,180,0006,820,00027,000May-147,500,0003,00,0007,200,000-May-167,500,0003,00,0007,200,000-May-167,500,0003,00,0007,200,000-May-167,500,0003,00,0007,200,000-May-167,500,000-7,500,000-May-167,500,000-7,500,000-May-167,500,000-7,500,000-May-167,500,000-7,500,000-May-16	Inception         Drawn         Remaining         Distributions         Adjusted           Date         Committed         to Date         Commitment         to Date         Ending Value           155,500,000         116,369,416         37,324,209         88,682,099         80,990,430           Jul-99         7,000,000         6,932,406         67,594         4,507,097         -           Feb-00         1,000,000         955,000         -         322,553         -           Oct-00         12,000,000         11,010,270         989,730         10,111,364         503,783           Oct-00         15,000,000         14,738,625         -         12,141,249         -           May-01         6,000,000         4,500,000         -         10,893,985         2,453,096           Dec-04         12,000,000         11,232,000         768,000         7,532,368         7,705,534           Nov-05         5,000,000         4,950,000         50,000         12,823,983         20,577,942           Mar-07         7,500,000         6,862,500         637,500         6,429,343         6,540,043           Sep-07         15,000,000         15,000,000         14,334,293         7,727,191         Mar-11         7,500	Inception         Drawn         Remaining to Date         Distributions         Adjusted           Date         Committed         to Date         Commitment         to Date         Ending Value         Total Value           155,500,000         116,369,416         37,324,209         88,682,099         80,990,430         169,672,529           Jul-99         7,000,000         6,932,406         67,594         4,507,097         -         4,507,097           Feb-00         1,000,000         955,000         -         322,553         -         322,553           Oct-00         12,000,000         11,010,270         989,730         10,111,364         503,783         10,615,147           Oct-00         15,000,000         14,738,625         -         12,141,249         -         12,141,249           May-01         6,000,000         4,500,000         -         5,496,840         105,930         5,602,770           Jun-01         10,000,000         11,232,000         768,000         7,532,368         7,705,534         15,237,902           Nov-05         5,000,000         4,950,000         50,000         12,823,983         20,577,942         33,401,925           Mar-07         7,500,000         15,000,000         6,700,0	Inception         Drawn         Remaining         Distributions         Adjusted         Total Value         to Date           Date         Committed         to Date         Commitment         to Date         Ending Value         Total Value         to Paid-in           Jul-99         7,000,000         6,932,406         37,324,209         88,682,099         80,970,430         169,672,529         1.46x           Jul-99         7,000,000         6,932,406         6,7594         4,507,097         4,507,097         0.65x           Feb-00         1,000,000         955,000         -         322,553         .         322,553         0.34x           Oct-00         15,000,000         11,010,270         989,730         10,111,364         503,783         10,615,147         0.96x           May-01         6,000,000         14,738,625         -         12,141,249         .         12,141,249         0.82x           Jun-01         10,000,000         10,000,000         -         10,873,985         2,453,096         13,347,081         1.33x           Dec-04         12,000,000         11,232,000         768,000         7,503,686         10,5930         5,602,770         1.36x           Nov-05         5,000,000         4,

Fixed Income Manager Performance

# Agincourt Core Fixed Income

For the Periods Ending June 30, 2017



100.00

80.00

60.00

40.00

20.00

0.00

43.57

AAA

AA

A

### Performance Goals

- Outperform the BloomBar US Aggregate.
- Over rolling three year periods, rank above the median in the eA US Core Fixed Income universe.

### **Sector Allocation**



**Quality Allocation** 

BB

BBB

Agincourt

# Dollar Growth Summary (\$000s)3 MonthsFYTDBeginning Market Value167,350169,582Net Additions-76-292Return on Investment2,766749



The Other sector consists of ABS, CMO, Convertibles, Municipals, Private Placements/144As and TIPS.

# 

B

CCC

BloomBar US Aggregate

СС

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С

8.0

Below

C/NR

# Agincourt Core Fixed Income

For the Periods Ending June 30, 2017

### 8.00 7.00 6.00 Return (%) 5.00 4.00 3.00 2.00 0.00 1.00 2.00 3.00 4.00 5.00 6.00 Standard Deviation (%) BloomBar US Agincourt Aggregate

		BloomBar US
	Agincourt	Aggregate
Return (%)	4.88	4.48
Standard Deviation (%)	3.58	3.27
Sharpe Ratio	1.24	1.24

10 Year Portfolio Statistics

Relative Statistics
0.99
81.55
0.45
1.54
60.00
106.46
101.41

10 Year Return Analysis

10 Year Growth of a Dollar



		BloomBar US
	Agincourt	Aggregate
Number of Months	120	120
Highest Monthly Return (%)	3.80	3.73
Lowest Monthly Return (%)	-3.54	-2.37
Number of Positive Months	81	81
Number of Negative Months	39	39
% of Positive Months	67.50	67.50

# 10 Year Risk / Return

# Agincourt Core Fixed Income

For the Periods Ending June 30, 2017


### Agincourt Core Fixed Income

For the One Year Periods Ending June



The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

For the Periods Ending June 30, 2017

# Account Description Performance Goals

- Strategy Multi-Sector Fixed Income
- Vehicle Non-Mutual Commingled
- Benchmark BloomBar US Aggregate
- Performance Inception Date February 1998
- Fees 50 bps

- Outperform the BloomBar US Aggregate.
- Each underlying strategy should outperform its relevant benchmark.

### Dollar Growth Summary (\$000s)

Beginning Market Value	3 Months 118,130	FYTD 108,346
Net Additions	-165	-643
Return on Investment	2,590	12,852
Ending Market Value	120,555	120,555



Growth of a Dollar

For the Periods Ending June 30, 2017

#### 10.00 9.00 8.00 7.00 Return (%) 6.00 5.00 4.00 3.00 2.00 4.00 6.00 8.00 0.00 2.00 10.00 12.00 Standard Deviation (%) BloomBar US Aggregate Oaktree

	BloomBar l		
	Oaktree	Aggregate	
Return (%)	6.88	4.48	
Standard Deviation (%)	8.90	3.27	
Sharpe Ratio	0.73	1.24	

10 Year Portfolio Statistics

10 Year Return Analysis

Ben	chmark Relative Statistics
Beta	0.65
R Squared (%)	5.69
Alpha (%)	4.28
Tracking Error (%)	8.72
Batting Average (%)	57.50
Up Capture (%)	120.06
Down Capture (%)	59.62

10 Year Return Histogram



	Oaktree	BloomBar US Aggregate
Number of Months	120	120
Highest Monthly Return (%)	7.58	3.73
Lowest Monthly Return (%)	-14.86	-2.37
Number of Positive Months	83	81
Number of Negative Months	37	39
% of Positive Months	69.17	67.50

#### 10 Year Risk / Return



For the One Year Periods Ending June



For the Periods Ending June 30, 2017



#### Performance Goals

- Outperform the Citigroup World Govt Bond.
- Over rolling three year periods, rank above the median in the eA All Global Fixed Income universe.

#### **Sector Allocation**



# Dollar Growth Summary (\$000s)

	3 Months	FYTD
Beginning Market Value	91,927	95,889
Net Additions	-74	-308
Return on Investment	3,045	-684
Ending Market Value	94,897	94,897

Characteristic and allocation charts represents data of the Loomis World Bond NH Trust (Non-Mutual Commingled).

The Other sector consists of ABS, CMO, Convertibles, Municipals, Private Placements/144As and TIPS.







For the Periods Ending June 30, 2017



The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.



For the One Year Periods Ending June

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

**Sector Allocation** Market Value: \$126,868,066 Opportunistic Cash Credit 6.30% 11.10% Convertible Bond Hedging Long/Short Credit\_ 3.60% 21.70% Fixed Income Relative Value Event-Driven 16.80% Equity 7.30% Distressed Debt Hedging 9.90% Equity Market Neutral Long/Short Equity 4.80% 18.50%

### For the Periods Ending June 30, 2017

#### Historical Net & Gross Exposure



### Strategy

- Low Volatility Hedge Fund of Funds
- Performance Inception Date: October 2002
- Redemption: Quarterly with 60 days written notice

#### Objectives and Constraints

- Target annualized return: 10-12%
- Target annualized standard deviation: approximate the standard deviation of the Barclays Capital Aggregate
- Maximum number of managers: 55
- Allocation to any manager: not to exceed 5% at cost or 7% at market value
- Allocation to Convertible Bond Hedging: 20-40%
- Allocation to Sovereign Debt & Mortgage Hedging: 0-10%
- Allocation to Credit Hedging & Distressed Debt Hedging: 0-25%
- Allocation to Merger Arbitrage: 0-20%
- Allocation to Equity Market Neutral & Long/Short Equity: 20-45%
- Allocation to Short Biased: 0-5%
- Allocation to Cash: 0-5%
  - Exposure
- Net Exposure: 37.50%
- Gross Exposure: 534.70%

Characteristic data provided by manager.

For the Periods Ending June 30, 2017

### 10 Year Risk / Return



		BloomBar US	HFRI FOF:
	PAAMCO	Aggregate	Conservative
Return (%)	2.96	4.48	0.79
Standard Deviation (%)	6.03	3.27	4.25
Sharpe Ratio	0.42	1.24	0.09

10 Year Portfolio Statistics

Benchmark Relative Statistics			
Beta	-0.02	1.33	
R Squared (%)	0.01	87.32	
Alpha (%)	3.25	1.96	
Tracking Error (%)	6.90	2.56	
Batting Average (%)	58.33	64.17	
Up Capture (%)	40.15	151.14	
Down Capture (%)	-4.86	110.17	

10 Year Return Analysis

10 Year Growth of a Dollar



	РААМСО	BloomBar US Aggregate	HFRI FOF: Conservative
Number of Months	120	120	120
Highest Monthly Return (%)	4.90	3.73	2.42
Lowest Monthly Return (%)	-9.06	-2.37	-5.91
Number of Positive Months	82	81	80
Number of Negative Months	38	39	40
% of Positive Months	68.33	67.50	66.67

# For the Periods I

#### Statistics are calculated using monthly return data. © 2017 Asset Consulting Group All Rights Reserved





For the One Year Periods Ending June

# Wellington Global Total Return

For the Periods Ending June 30, 2017



FYTD

59,950

59,877

-73

0

#### **Performance Goals**

Dollar Growth Summary (\$000s)

3 Months

59,778

59,877

-50

150

- Outperform the LIBOR 3 Month.
- Over rolling three year periods, rank above the median in the eA Global Unconstrained Fixed Income universe.

#### **Sector Allocation**



Return



#### **Quality Allocation**

The Other sector consists of ABS, CMO, Convertibles, Municipals, Private Placements/144As and TIPS.

**Beginning Market Value** 

Net Additions

**Ending Market Value** 

Return on Investment

### Wellington Global Total Return

For the Periods Ending June 30, 2017



The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

# **Private Credit**

### For the Period Ending June 30, 2017

### Summary of Cash Flows for 6 Months

Cash Outflows	Cash Inflows	Net Cash Flows
-12,726,113	501,617	-12,224,496

#### Summary of Portfolio Inception to Date

	Inception		Drawn	Remaining	Distributions	Adjusted		Total Value
	Date	Committed	to Date	Commitment	to Date	Ending Value	Total Value	to Paid-in
Total		60,000,000	18,684,603	41,315,397	480,862	18,933,695	19,414,557	1.04x
Mezzanine		20,000,000	8,684,603	11,315,397	314,337	8,832,593	9,146,930	1.05x
Newstone Capital Partners III	Jan-17	20,000,000	8,684,603	11,315,397	314,337	8,832,593	9,146,930	1.05x
Other		40,000,000	10,000,000	30,000,000	166,525	10,101,102	10,267,627	1.03x
LBC Credit Partners Fund IV	Sep-16	40,000,000	10,000,000	30,000,000	166,525	10,101,102	10,267,627	1.03x

Real Assets Manager Performance

# JP Morgan Strategic Property

For the Periods Ending June 30, 2017

Account Description	Account Info	ormation
Strategy Core Real Estate	Ending Market Value	\$115,903,709
Vehicle Non-Mutual Commingled	Fund Infor	mation
Benchmarks NFI ODCE Net and NCREIF Property	Gross Market Value	\$42,066,525,484
Performance Inception Date December 2007	Net Market Value	\$31,362,435,511
Fees First \$100M at 92 bps, next \$150M at 85 bps, next \$250M at 80 bps.	Cash Balance of Fund	\$2,107,469,786
balance at 75 bps	# of Properties	162
	# of Participants	428
Performance Goals		
<ul> <li>Outperform the NFI ODCE Net.</li> </ul>		





Midwest South

East

West

Characteristic and allocation charts represents data of the Strategic Property Fund (Non-Mutual Commingled).

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# JP Morgan Strategic Property



# JP Morgan Strategic Property

For the One Year Periods Ending June



# **Blackstone Property Partners**

For the Periods Ending June 30, 2017

Account Description	Account Information		
Strategy Core Real Estate	Ending Market Value	\$37,955,306	
Vehicle Limited Partnership	Fund Information		
Benchmarks NFI ODCE Net and NCREIF Property	Net Market Value	\$5,600,000,000	
Performance Incention Date January 2015	# of Properties	17	

#### Performance Goals

• Outperform the NFI ODCE Net and NCREIF Property.





Characteristic and allocation charts represents data of the Blackstone Property Partners (Limited Partnership).

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# **Blackstone Property Partners**



# **Blackstone Property Partners**

For the One Year Periods Ending June



# **Columbus Square**



# **Columbus Square**





### **Private Real Estate**

### For the Period Ending June 30, 2017

#### Summary of Cash Flows for 6 Months

Cash Outflows	Cash Inflows	Net Cash Flows
-4,908,075	6,936,204	2,028,129

#### Summary of Portfolio Inception to Date

	Inception		Drawn	Remaining	Distributions	Adjusted		Total Value
	Date	Committed	to Date	Commitment	to Date	Ending Value	Total Value	to Paid-in
Total		92,500,000	70,795,028	30,778,266	36,342,397	56,368,000	92,710,397	1.31x
Real Estate		92,500,000	70,795,028	30,778,266	36,342,397	56,368,000	92,710,397	1.31x
Siguler Guff Dist. Real Estate Opp.	Jul-11	10,000,000	8,608,587	1,650,773	6,965,931	6,220,846	13,186,777	1.53x
TA Associates Realty X	Nov-12	20,000,000	20,000,000	-	10,854,182	16,762,490	27,616,672	1.38x
Cerberus Real Estate Fund III	May-13	20,000,000	25,185,319	3,552,375	16,806,989	16,671,011	33,478,000	1.33x
Hall Capital Fund III	Feb-14	7,500,000	6,959,483	540,517	217,364	8,524,155	8,741,519	1.26x
Siguler Guff Dist. Real Estate Opp. II	Nov-14	10,000,000	7,507,577	2,492,423	756,118	7,273,331	8,029,449	1.07x
Cerberus Institutional Real Estate Partners 4	Jun-16	15,000,000	2,534,062	12,542,178	741,813	916,167	1,657,980	0.65x
Siguler Guff Dist. Real Estate Opp. II B	May-17	10,000,000	-	10,000,000	-	-	-	-

### **Mount Lucas Peak Partners**

For the Periods Ending June 30, 2017

Account Description	Performance Goals
Strategy Commodities	<ul> <li>Outperform the CS Hedge - Global Macro.</li> </ul>
Vehicle Non-Mutual Commingled	
Benchmark CS Hedge - Global Macro	

Performance Inception Date January 1998

• Fees 100 bps and an annual incentive fee

### Dollar Growth Summary (\$000s)

Beginning Market Value	3 Months 29,969	FYTD 29,665
Net Additions	-76	-336
Return on Investment	-329	235
Ending Market Value	29,564	29,564



Growth of a Dollar

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# Mount Lucas Peak Partners



# **Mount Lucas Peak Partners**





### **Gresham Tap Fund**

For the Periods Ending June 30, 2017

### Account Description Performance Goals

- Strategy Commodities
- Vehicle Non-Mutual Commingled
- Benchmark Bloomberg Commodity
- Performance Inception Date August 2014
- **Fees** 75 bps

# Outperform the Bloomberg Commodity over a complete market cycle.

<b>Dollar Growth Summary</b>	(\$000s)
------------------------------	----------

	3 Months	FYTD
Beginning Market Value	48,845	49,962
Net Additions	0	0
Return on Investment	-1,548	-2,665
Ending Market Value	47,297	47,297



Growth of a Dollar

#### **Gresham TAP Fund**

#### Attribution Analysis and Bloomberg Commodity Comparison

		Portfo <u>lio</u> W	Portfolio Weights (%)		OI (%)	ROI	ROI DIFF		YTD ROI (%)		ROI DIFF	
		<u>TAP</u>	<u>Bloomberg</u>	<u>TAP</u>	<u>Bloomberg</u>	<u>Abs</u>	<u>Est. Wgtd</u>	<u>TAP</u>	<u>Bloomberg</u>	<u>Abs</u>	<u>Est. Wgtd</u>	
Total Gross Return		100.00	100.00	-3.14	-3.22		0.08	-5.05	-5.61		0.56	
AGRICULTURE		15.56	25.06	3.13	3.28	-0.15	-0.49	-0.53	0.44	-0.97	-0.46	
	Corn	4.05	8.03	0.61	0.53	0.08	-0.14	2.11	1.96	0.15	-0.28	
	Soybean	4.51	5.70	-0.61	-0.91	0.30	0.04	-7.27	-7.59	0.33	0.00	
	Wheat (CBOT)	2.87	4.20	15.42	15.95	-0.53	-0.26	17.25	17.84	-0.59	-0.21	
	Wheat (KC)	0.77	1.47	17.78	17.82	-0.04	-0.12	15.11	15.15	-0.04	-0.09	
	Wheat (MGE)	0.29		40.49		40.49	0.08	41.28		41.28	0.09	
	Soybean Meal	2.43	2.95	-1.78	-1.89	0.11	0.00	-5.33	-5.62	0.29	0.00	
	Soybean Oil	0.66	2.72	2.70	2.58	0.12	-0.09	-6.32	-6.71	0.39	0.02	
ENERGY		27.20	27.29	-9.36	-9.88	0.52	-0.06	-19.12	-20.29	1.17	-0.36	
	Crude Oil	7.42	6.16	-10.64	-10.68	0.04	-0.15	-18.84	-18.82	-0.02	-0.46	
	Brent Crude	6.45	6.80	-9.77	-10.41	0.64	0.03	-17.00	-17.44	0.44	-0.04	
	Heating Oil	1.95	3.38	-7.32	-7.46	0.14	0.04	-16.79	-17.08	0.29	0.16	
	Gas Oil	2.32		-8.49	-8.45	-0.04	-0.17	-16.08	-16.12	0.03	-0.29	
	Natural Gas	6.25	7.48	-8.80	-9.59	0.79	0.11	-24.97	-25.10	0.13	0.18	
	Unleaded Gas (RBOB)	2.81	3.47	-9.10	-10.51	1.41	0.09	-19.03	-21.53	2.50	0.10	
INDUSTRIAL METALS		22.39	18.70	-1.05	-1.42	0.37	0.08	7.58	5.93	1.64	0.27	
	Aluminum	7.13	5.21	-2.62	-2.93	0.31	0.02	12.45	11.84	0.61	0.14	
	Copper (LME)	8.00		1.36	1.16	0.20	0.29	6.83	6.35	0.49	0.78	
	Copper (NY)	2.09	8.23	1.22	1.17	0.05	-0.26	6.72	6.55	0.17	-0.76	
	Nickel	1.41	2.37	-6.95	-6.90	-0.05	0.03	-7.37	-7.37	-0.01	0.01	
	Zinc	2.47	2.89	-0.85	-1.05	0.20	-0.01	6.59	6.15	0.44	-0.09	
	Lead	1.29		-2.38	-2.57	0.19	0.01	13.13	13.12	0.01	0.20	
LIVESTOCK		11.80	6.89	10.28	10.95	-0.67	0.28	14.43	10.94	3.49	0.96	
	Live Cattle	6.96	4.10	8.69	8.59	0.10	0.17	15.08	14.03	1.04	0.55	
	Lean Hogs	2.61	2.79	12.95	14.44	-1.49	-0.12	8.29	6.34	1.95	0.03	
	Feeder Cattle	2.23		10.74	9.96	0.78	0.22	18.06	16.90	1.16	0.38	
PRECIOUS METALS		17.46	16.26	-2.83	-3.40	0.57	0.08	6.49	5.87	0.62	-0.11	
	Gold	12.23	12.04	-0.93	-0.99	0.06	-0.03	7.09	6.99	0.10	-0.19	
	Silver	3.60	4.22	-9.70	-9.69	-0.01	0.06	2./5	2./2	0.02	-0.10	
	Platinum Dalla diver	0.94		-3.11		-3.11	0.00	1.50		1.50	0.05	
	Pallaalum	0.69	5 80	5.23 13.13	14 45	3.23	0.05	22.70	18 71	22.70	0.13	
TOODS & TIBERS	Cotton	1 41	1.37	-13.13	-14.45	1.52	0.03	-0.02	-2.46	2.72	0.21	
	Sugar	1.62	2.30	-19.24	-18.76	-0.48	0.08	-28.62	-30.13	1.51	0.22	
	White Sugar	0.23		-14.74		-14.74	-0.03	-23.34	00.10	-23.34	-0.05	
	Coffee	1.36	2.13	-12.75	-12.79	0.04	0.09	-12.70	-12.81	0.11	0.04	
	Coffee (Robusta)	0.30		-1.87		-1.87	0.00	-1.72		-1.72	0.01	
1	Cocoa	0.67		-8.79	-9.38	0.59	-0.05	-10.17	-11.70	1.54	-0.04	

For the Periods Ending June 30, 2017

Data provided by manager.

-A composite weighted return is shown for Wheat, Crude Oil, Heating Oil and Copper. Wheat (KC), Brent Crude, Gas Oil, Copper (NY) and Cocoa were added to TAP's portfolio in the middle of January 2008. Wheat (MGE) was added to TAP's portfolio in the middle of January 2010.

-MTD ROI % and YTD ROI% columns show TAP and Bloomberg individual commodity returns.

-'Abs' is the absolute difference in ROI between TAP and Bloomberg for each commodity. 'Est. Wgtd' is the portfolio effect (TAP's return x TAP's period avg. wgt. - Bloomberg's return x Bloomberg's period avg. wgt.). 'Average Weights' is calculated using month-end weights.

-All returns are estimates. Total Gross Return is gross of fees and includes cash returns. All indicated TAP returns are net of commissions and gross of management fees.

# **Gresham Tap Fund**



Appendix

### **Definitions of Statistical Measures**

**Alpha** - the annualized difference between the manager's actual return and the managers's expected return given its relative risk vs. the benchmark (which is represented by beta, a measure that tracks volatility to an index).

**Batting Average -** a measure used to quantify a manager's ability to meet or beat a benchmark. A manager who outperforms the benchmark 20 out of a possible 40 times has a batting average of 50.

Beta - measures the portfolio's sensitivity of returns to market movements represented by the primary benchmark.

**Down Capture -** demonstrates the ratio of the portfolio's average returns relative to the benchmark in periods in which the benchmark had a negative return. For instance, a down-capture of 96% indicates that, on average, the portfolio is down 96% when the benchmark is down 100%. Lower portfolio down-capture is preferred.

**R Squared -** the amount of the manager's return that can be explained by the benchmark. A R Squared of 100 indicates a perfect correlation, while a R Squared of 0 indicates no correlation at all.

**Sharpe Ratio** - a measure of return per unit of risk. Higher sharpe ratios are preferred while negative ratios are generally meaningless and cannot be used for comparison purposes.

**Standard Deviation -** a measure of the portfolio's volatility. A large standard deviation relative to the benchmark represents volatile portfolio returns.

**Tracking Error** - a measure that reports the difference between the return of a manager that is received and that of a benchmark that the manager is attempting to track.

**Up Capture -** demonstrates the ratio of the portfolio's average returns relative to the benchmark in periods in which the benchmark had a positive return. For instance, an up-capture of 96% indicates that, on average, the portfolio is up 96% when the benchmark is up 100%. Higher portfolio up-capture is preferred.

# Quality Rating Scale

Moody's Rating	S&P Rating	Prior to 1Q09	Beginning 1Q09	Beginning 3Q11	Moody's Rating	S&P Rating	Prior to 1Q09	Beginning 1Q09	Beginning 3Q11
TSY	TSY	10	26	24	Ba2	BB	6	13	13
AGY	AGY	10	25	24	Ba	BB		13	13
Aaa	AAA	10	24	24	MIG4		6	13	13
Aal	AA+	9.3	23	23	Ba3	BB-	5.7	12	12
Aa2	AA		22	22	B1	B+	5.3	11	11
Aa	AA	9	22	22	B2	В	5	10	10
MIG1		9	22	22	В	В		10	10
Aa3	AA-	8.7	21	21	B3	B-	4.7	9	9
Al	A+	8.3	20	20	Caal	CCC+	4.3	8	8
A-1			20	20	Caa2	CCC	4	7	7
A2	А	8	19	19	Caa	CCC		7	7
А	А		19	19	Caa3	CCC-	3.7	6	6
MIG2		8	19	19	Ca	СС	3	5	5
A3	A-		18	18	С	С	2	4	4
Baal	BBB+	7.7	17	17		DDD	1	3	3
Baa2	BBB	7.3	16	16		DD		2	2
Baa	BBB	7	16	16		D		1	1
MIG3			16	16	NR	NR	N/A	-1	-1
Baa3	BBB-	7	15	15	NA	NA	N/A		
Bal	BB+	6.7	14	14	N/A	N/A			

# Historical Benchmark Composition

### **Total Fund Policy**

10/31/1990	The index consists of 55.0% Russell 3000, 35.0% BloomBar US Aggregate, 10.0% MSCI EAFE.
06/30/2007	The index consists of 55.0% Russell 3000, 35.0% BloomBar Universal, 10.0% MSCI EAFE.
11/30/2007	The index consists of 55.0% Russell 3000, 10.0% MSCI EAFE, 30.0% BloomBar Universal, 5.0% NFI ODCE Net.
08/31/2012	The index consists of 65.0% MSCI ACWI, 30.0% BloomBar Universal, 5.0% NFI ODCE Net.
08/31/2014	The index consists of 60.0% MSCI ACWI, 30.0% BloomBar Universal, 5.0% NFI ODCE Net, 5.0% Bloomberg Commodity.
04/30/2016	The index consists of 60.0% MSCI ACWI, 25.0% BloomBar Universal, 10.0% NFI ODCE Net, 5.0% Bloomberg Commodity.